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SAROAD (Storage and Retrieval of Aerometric Data) Information

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Feb 79

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Agency

Office of Air Quality
Planning and Standards
Research Triangle Park NC 27711

EPA-450/4-79-005
February 1979

Air

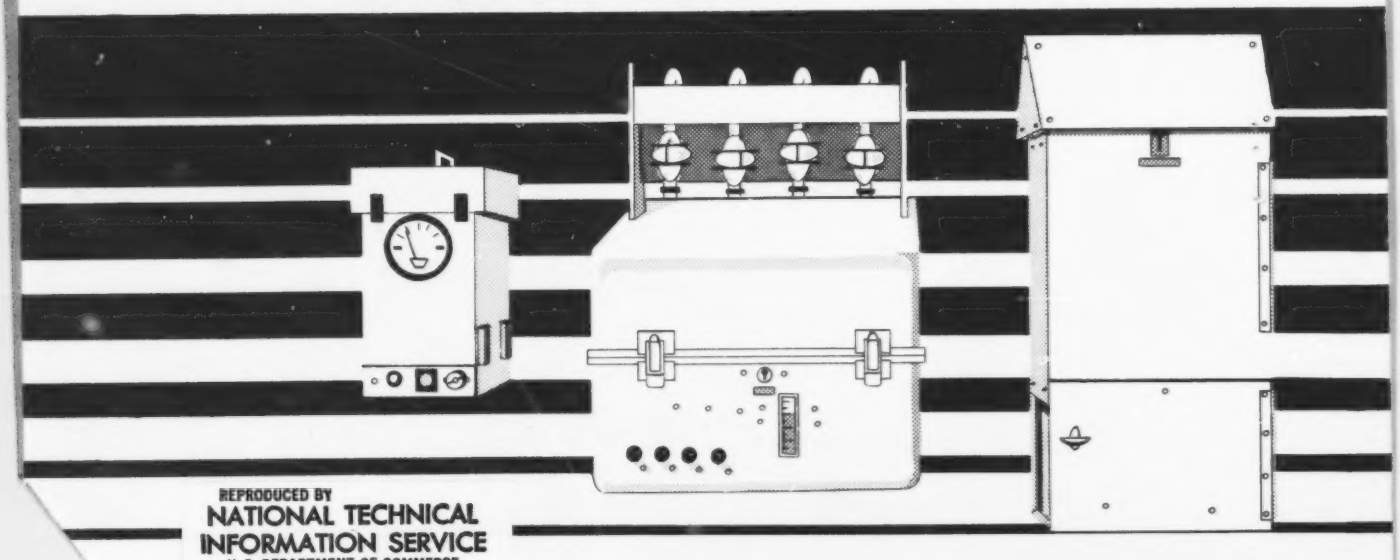
PB80-133A3A

EPA

SAROAD

Storage and Retrieval of Aerometric Data

Information



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This SAROAD Information Booklet describes the SAROAD System for an individual who is unfamiliar with SAROAD. The information booklet includes: (1) an overview of the data contained in SAROAD, (2) an explanation of available air quality publications, (3) a description of procedures for requesting data, and (4) a description and example of the most important computerized reports.

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SAROAD

Storage and Retrieval of Aerometric Data
Information

National Air Data Branch
Monitoring and Data Analysis Division

U.S. ENVIRONMENTAL PROTECTION AGENCY
Office of Air, Noise, and Radiation
Office of Air Quality Planning and Standards
Research Triangle Park, North Carolina 27711

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Introduction

Storage and Retrieval of Aerometric Data (SAROAD) is an automated data processing system utilized by the U.S. Environmental Protection Agency for storage of data concerning concentrations of air pollutants in the atmosphere. SAROAD is a part of the comprehensive Aerometric and Emissions Reporting System (AEROS), described in detail in a booklet "Aerometric and Emissions Reporting System", which is available upon request.

Air quality data are collected by monitoring networks operated by various State and local air pollution control agencies. Collection and reporting of these data are required by the Clean Air Act and U.S. EPA regulations for State Implementation Plans (SIPS).[1] After passing edit and validation checks, which are performed by the Regional Office, the data are forwarded to National Air Data Branch (NADB), Monitoring and Data Analysis Division, Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina, where they are stored on the UNIVAC 1110 Computer. After storage on the computer, the data are available for analysis through annual publications and computerized reports.

This booklet is designed for people who are unfamiliar with SAROAD to provide an explanation of the system and an example of the computerized reports that are available upon request. To meet these objectives, this booklet includes: (1) an overview of data contained in SAROAD, (2) an explanation of air quality publications, (3) a description of procedures for requesting SAROAD data, and (4) a description and example of SAROAD computerized reports. A list of additional references is provided for background information, and a glossary of terms is provided to help familiarize the user with terms used in data processing and air quality data.

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[1] *Federal Register, Volume 38, No. 149, Friday, August 3, 1973, pp. 20834 and 20835.*

Overview of the Storage and Retrieval of Aerometric Data System

General Description

Storage and Retrieval of Aerometric Data (SAROAD) is a computerized data handling system that accepts, stores, and reports information on concentrations of pollutants in the ambient air. The system contains data for most substances that have been routinely measured in the ambient air, but the largest volume of data is for the "criteria" pollutants (particulate, sulfur dioxide, carbon monoxide, nitrogen dioxide, hydrocarbons, and ozone).

SAROAD contains two major classes of data: sampling site information and ambient air quality data. These two classes of data are stored separately but are retrievable by site code, a number that is a unique identifier for each site. In addition to the site code, the air quality data have additional codes that indicate the specific pollutant sampled and the method utilized to analyze for the pollutant.

SAROAD Site File

The SAROAD site file contains descriptive information on the sampling site and its environment. These data are collected by the control agency when the sampling site is established or when the information changes and are reported to the Regional Office on the form in Figure 1. The resulting data cards are forwarded to NADB and are stored in the site file.

As indicated by the site identification form, the site file contains information such as the site's address, city name, county name, city population, geographical coordinates (both latitude-longitude and UTM coordinates), supporting agency, station type, sampler elevation above sea level and above ground level, EPA Region, AQCR code, state code, area code, county code, site code, agency code, and project code. The identifier for each site includes the codes for state, area, site, agency, and project. The identifier is determined from the following criteria:

1. State code – state in which the site is located.

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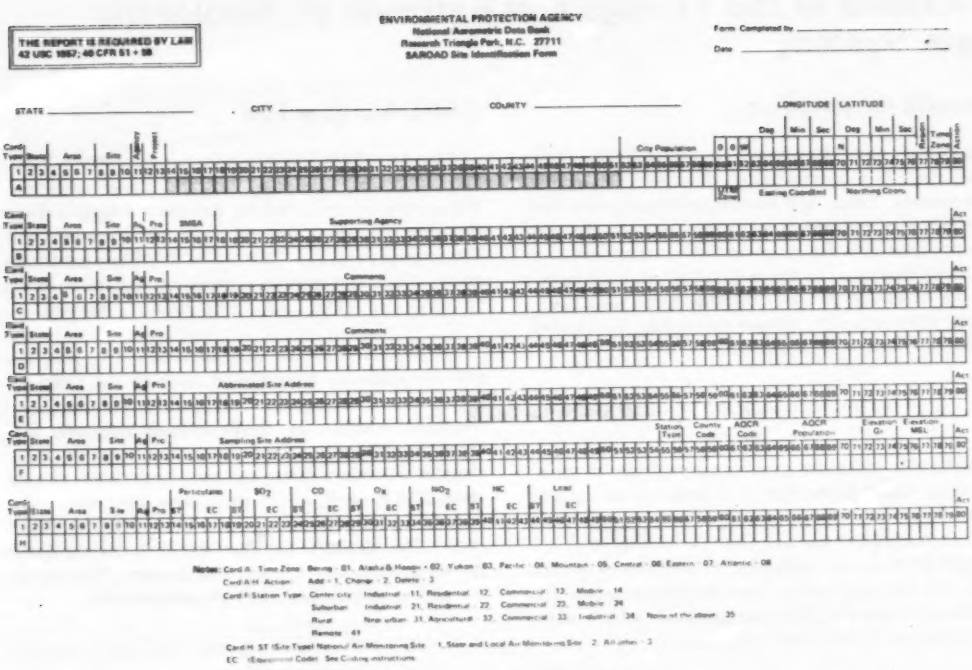
THE REPORT IS REQUIRED BY LAW
42 USC 1857; 40 CFR 51 + 58
ENVIRONMENTAL PROTECTION AGENCY
National Aerometric Data Bank
Research Triangle Park, N.C. 27711
SAROAD Site Identification Form
Form Completed by
Date
STATE
CITY
COUNTY
LONGITUDE
LATITUDE
Deg
Min
Sec
Supporting Agency
Comments
Abbreviated Site Address
Sampling Site Address
Station Type
County Code
AQCR Code
AQCR Population
Elevation Gr.
Elevation MSL
Particulates
SO2
CO
Ox
NO2
HC
Lead
EC
ST
Notes: Card A Time Zone: Bering - 01, Alaska & Hawaii - 02, Yukon - 03, Pacific - 04, Mountain - 05, Central - 06, Eastern - 07, Atlantic - 08
Card A/H Action: Add - 1, Change - 2, Delete - 3
Card F Station Type: Center city: Industrial - 11, Residential - 12, Commercial - 13, Mobile - 14
Suburban: Industrial - 21, Residential - 22, Commercial - 23, Mobile - 24
Rural: Near urban - 31, Agricultural - 32, Commercial - 33, Industrial - 34, None of the above - 35
Remote - 41
Card H ST (Site Type): National Air Monitoring Site - 1, State and Local Air Monitoring Site - 2, All other - 3
EC (Equipment Code): See Coding Instructions

Figure 1. SAROAD Site Identification Form

2. Area code – city code in which the site is located, or the county code if not located in a city.

3. Site code – code from 001 to 999, which is uniquely assigned for each site within an area.

4. Agency code – alphabetic code for the type (state, county, city) of agency that performs the laboratory analysis.

5. Project code – code to indicate the type (population oriented, source oriented, etc.) of sampling.

The site file currently contains data for approximately 12,000 sites; roughly 4000 are currently operational. The sites that are not operational are retained to maintain as large a data base as possible for establishing trends in ambient air quality around the nation. The site file is utilized (1) to ensure that the site has been registered before any data can be stored for the site and (2) to provide a description of the site with the air quality data to help in correlation of the air quality data with the surrounding site environment.

Ambient Air Quality Data

The air quality data files contain data on concentrations of pollutants for some sites as early as 1957 and for most state sites since 1970. All state agencies are required to submit quarterly reports for all air quality data gathered from air quality surveillance networks required under State Implementation Plans.

All data are submitted in standardized formats as shown in Figures 2 and 3. These forms contain space for two categories of information: identifier and data. The identifier includes the site code as registered on the site file, the parameter code, the method code, the units in which the data are reported, the sampling interval, and the date on which the sample was taken. The parameter code represents the unique code assigned to each pollutant, and the method code defines the procedure utilized to collect the sample and analyze it for the specific pollutant. The sampling time interval identifies the time period which the data value represents and varies from 1-hour averages obtained from continuous monitoring instruments to samples collected for a day, week, month, or quarter. The data are the actual average concentration of the pollutant for the specific hour, day, week, etc.

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ENVIRONMENTAL PROTECTION AGENCY
National Aerometric Data Bank
Research Triangle Park, N. C. 27711

SAROAD Daily Data Form

THE REPORT IS REQUIRED BY LAW
42 USC 1857; 40 CFR 51

OMB No. 158-R0012
Approval expires 2/77.

24-hour or greater sampling interval

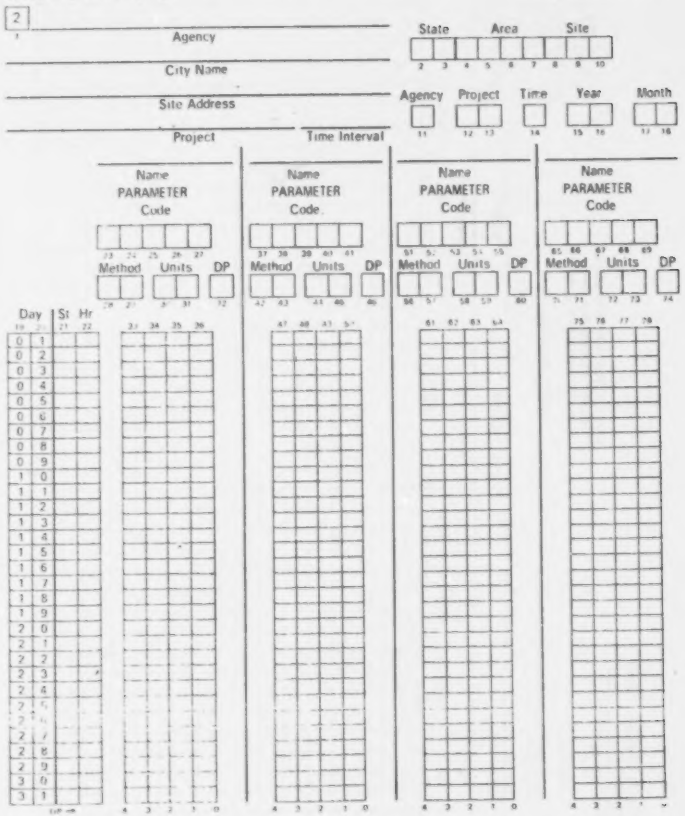

Figure 2. SAROAD Daily Data Form.

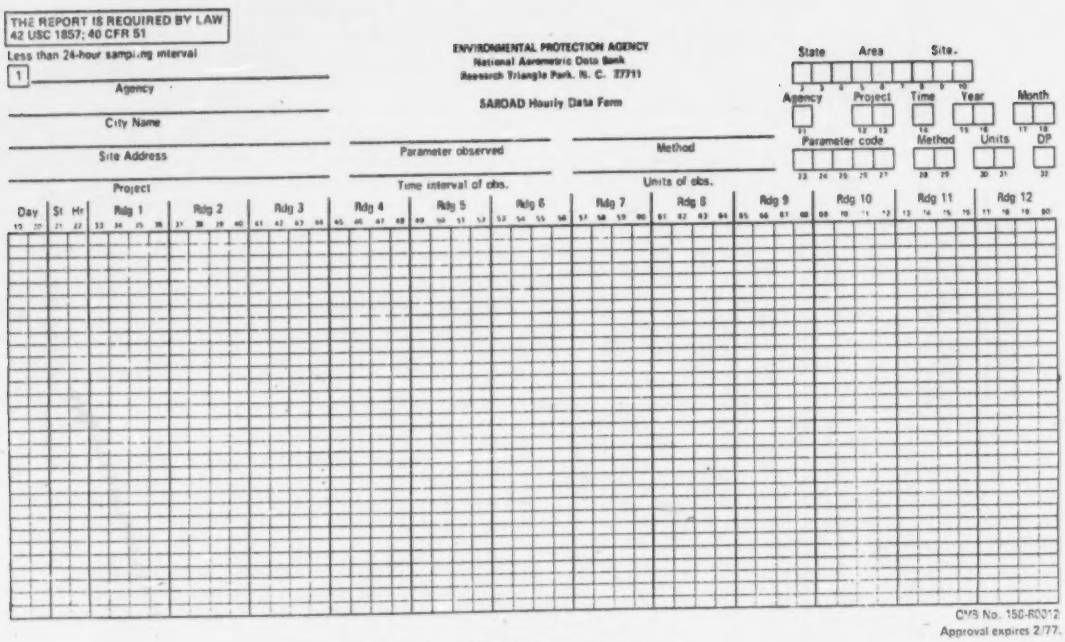

Figure 3. SAROAD Hourly Data Form.

Data reported to EPA Regional Offices by state agencies are edited by computer to ensure that the identifiers are valid assigned codes and to ensure that the data values are within reasonable bounds. The data are forwarded to NADB for storage in the raw data files of the computer. The computer is utilized to create a summary file of quarterly and annual information which includes the maximum value, minimum value, arithmetic mean, geometric mean, arithmetic standard deviation, geometric standard deviation, frequency distribution, and counts of violations of National Ambient Air Quality Standards for each quarter and year for each site-pollutant-method combination from the raw data files.

The computerized reports described in this booklet are created from the data stored on the site file, raw data files, and summary file.

Air Quality Data Publications

Air quality data publications are compiled quarterly and annually from SAROAD for efficient distribution of commonly utilized data. The publications include Air Quality Data – 19XX-XXX Quarter Statistics, Air Quality Data – 19XX Annual Statistics, Directory of Air Quality Monitoring Sites Active in 197X, and Air Quality Data For Non-Criteria Pollutants 19XX through 19XX. Persons interested in obtaining air quality data should first determine whether existing publications provide the information desired. The existing publications have the advantage of being readily available at little or no cost to the user, but have the disadvantage of being representative of a given time period and may not reflect the current status of the data files. If the publications do not satisfy the specific need, the client should evaluate the SAROAD computerized reports and request the useful ones utilizing the procedures in the following section. Copies of these publications are available from:

Library Services Office (MD-35)
Office of Administration
U.S. Environmental Protection Agency
Research Triangle Park, NC 27711

FTS: 629-2777
Commercial: (919) 541-2777

or

National Technical Information Service
5285 Port Royal Road
Springfield, VA 22161
FTS: 557-4650
Commercial: (703) 557-4650

Air Quality Data — Quarterly Statistics

Published quarterly by EPA, this report contains quarterly summary statistics for the air quality data generated by State and local agencies as required by EPA Regulations for State Implementation Plans. This publication makes particulate, carbon monoxide, sulfur dioxide, nitrogen dioxide, hydrocarbons, and oxidant data available to all agencies and the public. It provides a one-line summary for each site-pollutant combination and is sorted by pollutant, method of collection and analysis, State, Air Quality Control Region, area, and site. Figure 4 is an example of the report format.

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PARTICULATE, micrograms per cubic meter (25 C)
HI-VOL GRAVIMETRIC, 24 hours

1977 Third Quarter

Site location	Site No	Ag/ proj	No obs	Min obs	Percentiles 10	30	50	70	90	95	99	Max obs	Arithmetic Mean	Std dev	Geometric Mean	Std dev
ALABAMA																
001 Choctaw Co	001	F01	12	18	18	20	24	26	33	58	58	58	27	10.88	25.22	1.38
001 Demopolis	002	F01	9	25	25	36	38	66	116	116	116	116	54	30.05	47.95	1.66
001 Evergreen	001	F01	7	15	15	34	36	37	45	45	45	45	32	11.38	29.68	1.54
001 Selma	002	F01	5	23	23	35	45	51	59	59	59	59	43	14.03	40.50	1.45
002 Montgomery	007	F01	11	24	26	33	39	42	47	63	63	63	38	11.09	36.80	1.33
	008	F01	14	13	23	30	35	42	53	139	139	139	42	29.87	35.92	1.69
002 Opelika	001	F01	14	25	26	32	43	47	64	234	234	234	54	52.90	44.37	1.74
002 Phenix City	001	F01	12	25	26	32	43	47	64	234	234	234	54	52.90	44.37	1.74
002 Troy	001	F01	14	25	26	32	43	47	64	234	234	234	54	52.90	44.37	1.74
003 Alexander City	002	F01	12	8	18	19	28	34	60	60	60	60	33	16.71	28.34	1.78
003 Anniston	001	F01	14	10	18	22	27	40	44	492	492	492	67	134.19	33.64	2.58
	001	F01	14	28	34	51	53	72	94	110	110	110	63	22.94	58.83	1.47
	002	F01	10	8	8	33	46	54	67	94	94	94	47	24.27	39.24	2.00
003 Childersburg	001	F01	11	13	22	27	31	41	58	67	67	67	36	16.93	32.29	1.62
003 Gadsden	002	F01	24	21	31	37	46	54	72	85	282	282	57	50.23	48.25	1.64
	003	F02	23	34	43	51	67	94	111	119	352	352	81	64.20	69.29	1.66
	001	G01	68	37	49	69	85	110	151	176	210	210	96	39.94	88.10	1.51
004 Bessemer	005	G02	80	31	72	95	119	148	208	229	293	293	130	53.96	119.70	1.51
004 Birmingham	010	G01	15	24	47	54	67	74	86	94	94	94	63	17.61	59.86	1.39
	011	G01	15	35	45	56	64	79	115	198	198	198	77	39.41	69.98	1.52
	012	G01	74	25	46	58	75	96	122	148	154	154	80	31.19	74.49	1.49
	019	G01	1	159	159	159	159	159	159	159	159	159				
	021	G02	1	77	77	77	77	77	77	77	77	77				
004 Center Point	002	G01	13	33	35	41	50	56	68	74	74	74	50	13.24	48.49	1.30
004 Clanton	002	F03	15	19	23	30	37	40	51	71	71	71	38	12.81	36.34	1.39
004 Fairfield	003	G02	72	36	42	63	79	91	116	129	147	147	79	26.52	74.63	1.42
004 Hueytown	002	G02	10	24	24	33	38	42	59	106	106	106	46	23.43	41.64	1.52
004 Jasper	001	F01	3	66	66	66	68	122	122	122	122	122				
004 Leeds	003	G01	71	43	79	110	125	144	197	209	326	326	132	46.85	124.30	1.44
004 Pell City	001	F01	13	27	33	35	48	53	80	85	85	85	49	18.14	46.48	1.43
004 Tarrant City	001	G01	62	52	75	101	131	174	233	242	401	401	145	67.65	130.95	1.56
004 Tuscaloosa	003	F01	9	22	22	38	42	67	106	106	106	106	54	29.57	47.23	1.73
005 Baldwin Co	002	F03	2	72	72	72	72	147	147	147	147	147				
	003	F01	2	59	59	59	59	77	77	77	77	77				
	001	F01	13	18	18	27	34	44	46	48	48	48	34	10.79	31.77	1.43
005 Brewton	002	G01	15	24	36	42	46	52	70	71	71	71	50	14.28	47.76	1.35
005 Chickasaw	001	G01	6	43	43	55	55	62	94	94	94	94	61	17.33	59.24	1.29
005 Mobile	002	G01	63	23	31	39	46	56	78	86	95	95	51	17.65	47.93	1.39
	006	G01	13	27	32	54	63	98	151	163	163	163	77	43.46	66.83	1.75
	008	G01	86	28	42	51	68	84	141	148	227	227	78	42.67	69.94	1.59
	009	G01	15	15	19	23	32	50	71	76	76	76	37	19.08	32.99	1.64
	013	G01	13	14	20	20	24	34	38	145	145	145	35	33.89	28.00	1.76
005 Mobile Co	021	G01	12	22	26	29	38	58	67	98	98	98	46	21.84	41.83	1.56

Figure 4. Quarterly Reports.

Air Quality Data — Annual Statistics

Published annually by EPA, this report contains the same information as the quarterly statistics but for a calendar year. Beginning with the 1975 Annual Statistics, another report was combined with the original format. The report is also by pollutant for particulate, carbon monoxide, sulfur dioxide, nitrogen dioxide, and oxidants and summarizes violations of the National Ambient Air Quality Standards. Figure 5 is an example of this report format.

Directory of Active Air Monitoring Sites

Published annually by EPA, this publication contains the complete site description for any site that has reported data to SAROAD for the specific year. In addition to the site description, the pollutants, method of collection and analysis, time interval, units, and number of observations are also listed for each site. The sites are listed in alphabetical order by state and alphabetically within each state. Figure 6 is an example of this report format.

Air Quality Data for Non-Criteria Pollutants

This publication contains several years of data and is not published on a fixed schedule. Designed to be an inventory of the individual pollutants analyzed from the particulates collected on high-volume filters, this publication is also organized by pollutant, state, site, and year. Figure 7 is an example of this report format.

Beginning in March 1979 the "Air Quality Data - Annual Statistics", will be the only routine air quality data publication published by the National Air Data Branch. Computerized reports are available to replace these publications.

SUSPENDED PARTICULATE MATTER (1101)

METHOD: GRAVIMETRIC, 24-HOUR HI-VOLUME FILTER SAMPLE-91

AIR QUALITY CONTROL REGION						YEAR 19--	NO. OF VALID VALUES	NO. OF DAILY VALUES EXC'D'G 24-HR STDS. SEC.	PRI.	HIGHEST 24-HR VALUES UG/CU.M. 1ST	2ND	ANNUAL RATIOS TO ANN. STDS SEC.	PRI.	ANNUAL GEOM. MEAN UG/CU.M.
007 TENNESSEE RIVER VALLEY-CUMBERLAND MOUNTAINS CONTINUED														
ALABAMA	01	1740	001	601	MARTSELLE	75	91			89	84			917
ALABAMA	01	1860	001	P01	HUNTSVILLE	75	21			103	82			547
ALABAMA	01	1860	002	H01	HUNTSVILLE	75	45			85	77			367
ALABAMA	01	1860	003	H01	HUNTSVILLE	75	47	1		177	146			597
ALABAMA	01	1860	004	H01	HUNTSVILLE	75	92			89	84			377
ALABAMA	01	1860	006	H01	HUNTSVILLE	75	94			96	92			327
ALABAMA	01	1860	007	H01	HUNTSVILLE	75	96			99	82			387
ALABAMA	01	1860	008	H01	HUNTSVILLE	75	91			112	103			407
ALABAMA	01	1860	009	H01	HUNTSVILLE	75	8			49	47			
ALABAMA	01	1860	010	H01	HUNTSVILLE	75	45			89	86			377
ALABAMA	01	1860	011	H01	HUNTSVILLE	75	48			116	111			437
ALABAMA	01	1860	014	H01	HUNTSVILLE	75	191	1		165	145	.81	.65	49
ALABAMA	01	1920	002	H02	JACKSON CO	75	43	4	1	336	237			507
ALABAMA	01	1920	012	H03	JACKSON CO	75	42			135	93			377
ALABAMA	01	1920	019	H02	JACKSON CO	75	43	8	2	459	329			717
ALABAMA	01	1920	020	H02	JACKSON CO	75	40	4	2	281	273			577
ALABAMA	01	1920	023	F02	JACKSON CO	75	33	4	3	388	357			597
ALABAMA	01	1920	024	H02	JACKSON CO	75	45	4		234	223			837
ALABAMA	01	1920	025	H02	JACKSON CO	75	10			97	95			
ALABAMA	01	2080	001	H02	LAUDERDALE CO	75	44			142	95			367
ALABAMA	01	2080	004	H02	LAUDERDALE CO	75	44			128	126			517
ALABAMA	01	2100	001	603	LAWRENCE CO	75	29			126	110			477
ALABAMA	01	2540	001	F01	MUSCLE SHOALS	75	43	1		168	129			587
ALABAMA	01	2940	001	F01	RUSSELLVILLE	75	16			128	78			
ALABAMA	01	3000	002	F01	SCOTTSBORO	75	8			150	96			
ALABAMA	01	3000	003	F01	SCOTTSBORO	75	7			82	77			
TENNESSEE	44	0600	001	F01	COOKEVILLE	75	60			115	98	.77	.61	46
TENNESSEE	44	0600	002	F01	COOKEVILLE	75	62			93	87	.51	.41	31
TENNESSEE	44	0660	001	F01	CROSSVILLE	75	59			95	76	.38	.30	23
TENNESSEE	44	0680	001	P03	CUMBERLAND CO	75	30			127	117	.63	.50	38
TENNESSEE	44	2100	001	F01	MC MINNVILLE	75	51			89	77	.64	.51	39
TENNESSEE	44	2220	001	F01	MARION CO	75	48	1		219	126	.60	.48	37

Figure 5. Annual Statistics.

ALABAMA

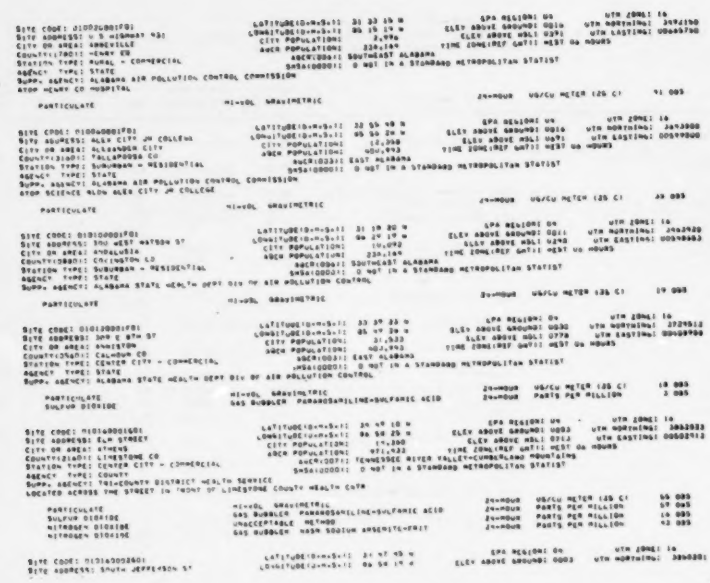


Figure 6. Site Directory.

Reproduced from best available copy.

NON-CRITERIA POLLUTANT REPORT

POLLUTANT: BENZENE SOLUBLE ORGANIC FRACTION (UNITS: UG/CU METER (25 C))

METHOD: HI-VOL BENZENE EXTRACTION-SOXHLET

1971 TO 1976

STATE SITE CODE	AREA	SITE ADDRESS	WAY/ POLL	SAMPLING INTERVAL	YR	NO. OF OBS.	MAXIMUM VALUE	ARITHMETIC MEAN
ALABAMA								
0101*0001	ANDALUSIA	300 WEST WATSON ST.	F01	24 HOUR	73	38	8.3	4.0
					74	13	10.9	
0101*0001	ANNISTON	309 EAST 8TH STREET	F01	24 HOUR	72	37	9.4	
					73	7	4.8	
					74	1	4.0	
0102*0002	BALDWIN CO	COR PENNSYLVANIA & CHICAG	F03	24 HOUR	72	11	4.1	
0103*0001	BESSEMER	1800 FIRST AVENUE	F01	24 HOUR	72	51	4.5	3.7
0104*0001	BREWTON	200 SOUTH STREET	F01	24 HOUR	73	19	4.1	
					74	5	23.0	
0106*0001	CHICKASAW	46 W GRANT ST	F01	24 HOUR	72	28	25.0	
0106*0002	CHICKASAW	YOUNGE HARDWARE			73	40	40.0	4.3
					74	40	46.0	4.8
0107*0001	CLANTON	112 AUBURN STREET	F03	24 HOUR	72	50	6.9	3.3
					73	23	11.0	
0107*0001	CLAYE CO	CLAYE STREET (COURT HOU	F01	24 HOUR	72	48	5.1	3.6
					73	15	3.1	
0109*0001	CULLMAN	305 N 4TH AVE E	F01	24 HOUR	72	51	8.5	3.9
					73	25	10.3	
					74	40	7.3	
0110*0001	DECATUR	CORNER OF OAK & DAVIS STS	F01	24 HOUR	72	18	6.3	
0110*0002	DECATUR	AUSTINVILLE RD & 1ST AVE	F01	24 HOUR	73	42	9.6	3.9
0110*0003	DECATUR	BELTLINE & WHEELER HWY	F01	24 HOUR	73	24	7.8	
0111*0001	DEMOPOLIS	FIRE DEPT			73	10	20.1	
					74	55	11.8	6.2
0111*0001	DOTHAN	404 WEST WASHINGTON ST	F01	24 HOUR	72	25	19.9	
					73	54	9.4	3.0
0112*0001	EVERGREEN	COUNTY HEALTH DEPT	F01	24 HOUR	73	24	8.0	
					74	56	8.6	4.7
0113*0001	FLORENCE	200 WEST TENNESSEE ST	F01	24 HOUR	73	24	11.7	
					74	1	8.0	
0113*0003	FLORENCE	RUSSELL STATEN VOCATIONAL	F01	24 HOUR	73	44	6.1	3.1
0113*0001	FORT PAYNE	500 GRAND AVE	F01	24 HOUR	73	71	7.3	
					74	56	25.0	3.0
0113*0002	GADSDEN	FIRE DEPT GOLDSMORD AVE	F01	24 HOUR	73	17	7.0	
					74	1	8.0	
0113*0001	GADSDEN	WALNUT PARK FIRE STA	F01	24 HOUR	73	54	25.0	3.5

Figure 7. Air Quality Data Report Format.

Reproduced from best available copy.

Procedures for Requesting Computerized Reports

The computerized reports described in the next section may be requested from EPA Regional Offices or the National Air Data Branch. If the data are for states within the area of one EPA Regional Office, the request should be directed to that Regional Office. Regional Office addresses and the States in each region are given in Table I. If the data are for states in more than one EPA Region, the request should be directed to:

Requests and Information Section (MD-14)
National Air Data Branch
U.S. Environmental Protection Agency
Research Triangle Park, NC 27711

FTS: 629-5491
Commercial: (919) 541-5491

All requests except those received from within EPA or from other Federal agencies will be processed in accordance with the Freedom of Information Act. In order for a request to be evaluated and processed, the request must be made in a letter; however, before submitting the letter, a telephone call to the Regional Office or NADB may be appropriate to discuss availability of data and possible new computerized reports.

When requesting data by letter, the following items must be specified:

1. Computerized report name, or if none specifically applies, the data items required.
2. Geographical area required for retrieval as well as other retrieval options such as pollutants, methods, intervals, and years. Whenever it is possible, the actual codes for the retrievals (state, AQCR, site, pollutant, and method) should be specified. These are included in AEROS Manual Series Volume V: AEROS Manual of Codes.
3. Specific sorts desired.
4. Name of person to contact and telephone number in case questions arise.
5. Any time constraints involved.

6. Authorization to assume cost of providing the data.

Requests utilizing computerized reports are often filled within 2 weeks. If a request requires more than 2 weeks, the requestor is notified.

Some requests, because of the large volume of data created, are best supplied on magnetic tape. The section on computerized reports specifies which reports may be obtained on magnetic tape. In all requests requiring magnetic tapes, the requestor must supply the magnetic tapes and specify the characteristics of the desired tapes. Since the magnetic tapes are created on a UNIVAC 1110 computer, the characteristics of the desired tapes include the following recording options: (1) character code – ASCII or EBCDIC, (2) tracks – 7 or 9, (3) density – 800 or 1600, and (4) unlabeled. The record length and blocksize vary based on the specific report produced.

As a Federal agency, EPA normally makes no charge for reports requested by other Federal agencies; however, if a request is of major impact on NADB's computer budget, NADB may request that user and account codes be established by way of interagency agreements.

Many SAROAD data users are non-Federal and typically include state and local air pollution control agencies, universities, contractors, private industry, consultants, and private citizens. For non-Federal users, except state and local air pollution control agencies, a charge may be necessary to cover the costs of retrieving and printing the requested data; if so, the requestor will be notified before any cost is incurred. This booklet will not give specific costs for individual reports since the retrieval and sort options are so numerous for each individual report.

Table 1. LIST OF REGIONAL OFFICES[a]

Regional location	Commercial telephone	FTS telephone
EPA Region I 60 Westview St. Lexington, MA 02173	(617)861-6700	861-6700
EPA Region II 26 Federal Plaza New York, NY 10007	(212)264-9802	264-9800
EPA Region III 6th and Walnut St. Philadelphia, PA 19106	(215)597-9860	597-8133
EPA Region IV 345 Courtland St. Atlanta, GA 30308	(404)881-2864	257-2864
EPA Region V 230 S. Dearborn Chicago, IL 60604	(312)353-1447	353-2303
EPA Region VI 1201 Elm St. Dallas, TX 75270	(214)749-3761	729-2724
EPA Region VII 324 E. 11th St. Kansas City, MO 64106	(816)374-3791	758-3791
EPA Region VIII 1860 Lincoln St. Denver, CO 80295	(303)837-2226	327-2226
EPA Region IX 215 Fremont St. San Francisco, CA 94105	(415)556-2270	556-2326
EPA Region X 1200 6th Ave. (M/S 413) Seattle, WA 98101	(206)442-1580	399-1580
National Air Data Branch Chief, Requests & Information Section Research Triangle Park, NC 27711	(919)541-5395	629-5395

[a]States in each region are listed in Table 1 (continued).

Table 1 (continued). LIST OF STATES IN EACH REGION

EPA Region I	Connecticut Maine	Massachusetts New Hampshire	Rhode Island Vermont
EPA Region II	New Jersey Virgin Islands	New York	Puerto Rico
EPA Region III	Delaware District of Columbia	Maryland Pennsylvania	Virginia West Virginia
EPA Region IV	Alabama Florida South Carolina	Georgia Kentucky Tennessee	Mississippi North Carolina
EPA Region V	Illinois Indiana	Minnesota Michigan	Ohio Wisconsin
EPA Region VI	Arkansas Oklahoma	Louisiana Texas	New Mexico
EPA Region VII	Iowa Nebraska	Kansas	Missouri
EPA Region VIII	Colorado Montana	North Dakota South Dakota	Utah Wyoming
EPA Region IX	American Samoa Arizona	California Guam	Hawaii Nevada
EPA Region X	Alaska Washington	Idaho	Oregon

SAROAD Computerized Reports

Both raw data and summary reports can be obtained from the computer. Options for retrieving data vary slightly because of variations in the computer programs.

Raw data reports list the actual stored data on pollutant concentrations in the ambient atmosphere. They give the geographic location of the site, as specified by the Site Code; the times and averaging periods of the data; and the method of data collection and analysis. Raw data reports include the following:

1. Raw data for less than 24-hour averaging periods.
2. Raw data for sampling periods equal to or greater than 24 hours.
3. Standards-violations reports.
4. Site description inventory.
5. Raw data in SAROAD format.
6. Meteorological raw data report.

Summary reports list quarterly and annual summary statistics for individual sites and provide summaries of available data on a state or national basis. Summary reports include the following:

1. Yearly frequency distribution.
2. Quarterly frequency distribution.
3. Yearly report by quarters.
4. Inventory reports.
5. Summary report of valid data.
6. Summary of monitoring activities.
7. Active site report.

The remaining portion of this section describes the individual reports giving the retrieval options, sort options, and sample reports.

Raw Data Less Than 24 Hours

GENERAL DESCRIPTION

This report lists the hourly observations of pollutant concentrations in 24 columns, 1 line per day, 1 month per page. The report may also be used, with suitable modifications in format, for data recorded for 2-, 3-, 4-, 6-, 8-, and 12-hour intervals. The heading of the report contains: the name of the pollutant; the pollutant/method code; the units used; the method of collection and analysis; the name of the state; the area; the site name and address; the complete site, agency, and project code; the month and year; and an identifier giving the averaging period of the observational data (for example, "1-hour data listing"). To the left of the 24-column body of the report is a column giving the days of the month; to the right are columns for the daily mean values and the number of observations made each day. Below the row for the last day of the month are rows, for the average values for each hour, the number of observations made at each hour throughout the month, and the maximum value occurring at each hour. In the lower right-hand corner are the average value for the entire month, the total number of observations for the month, and the maximum value that occurred in the month. Running averages from 1-hour data can also be provided for periods of 3, 8, 12, and 24 hours.

RETRIEVAL OPTIONS

This report may be retrieved by the following selection criteria: nation, state, area, site, agency, project, pollutant, method, interval, begin date, and end date.

Most combinations of the above selection criteria are valid, but the following combinations are invalid: (1) area without state, (2) site without state/area, (3) project without agency, and (4) method without pollutant.

SORT OPTIONS

There are no optional sorts available. Data are printed in the same order as the select cards are submitted.

SAMPLE REPORT

Figure 8 shows a sample of this report for ozone measurements at a site in Honolulu, Hawaii.

Preceding page blank

SEP 12, 1979
SEP 8, 1978 DATA BASE VERSION

NATIONAL AEROMETRIC DATA BANK
ENVIRONMENTAL PROTECTION AGENCY

PAGE 1
SELECT CARD 1

OZONE
44ZC111
CONCENTRATION IN PARTS PER MILLION
INSTRUMENTAL CHEMILUMINESCENCE

HAWAII
HONOLULU
STATE HEALTH DEPT BLDG 1250 PU
(21012000019019

JAN 1976

01-HOUR DATA LISTING

DAY	AM 12	1	2	3	4	5	6	7	PM 5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	DAILY MEAN	NO.
01	.012	.003	.000	.000	.003				.019	.017	.020	.022	.023	.020	.020	.018	.017	.014	.012			.012	.012	.012	.017	.013	20
02	.017	.020	.017	.020	.017	.017	.017		.012			.014	.014	.017	.014	.014	.014	.014	.012			.014	.014	.014	.014	.015	20
03	.017	.017	.017	.020	.020	.020	.017		.014	.017	.017	.017	.017	.017	.017	.014	.014	.014	.012			.017	.020	.020	.017	.017	22
04	.019	.020	.023	.023	.020	.017	.014		.010	.017	.020	.023	.023	.023	.020	.017	.014	.012	.006			.003	.006	.006		.015	21
05		.002	.006	.006			.003			.029	.032		.009	.017	.026	.026	.023	.014	.012			.003		.003			15
06											.025	..35	.032	.026	.026	.023	.020	.014	.012								9
07			.006	.014	.023	.026	.020		.013	.009	.012			.009	.020	.020	.020	.012	.017			.029	.020	.026	.029	.015	18
08	.023	.026	.023	.029	.023	.014	.009		.014	.014	.029	.037	.032	.029	.014	.014	.014	.017	.014	.014		.012	.017	.023	.029	.018	22
09	.032	.032	.032	.034	.034	.029	.019		.017								.018	.018	.015	.010		.010	.010	.015	.012		16
10	.019	.015	.012	.295					.015	.018	.029	.023	.023	.023	.029	.015	.010	.007	.004			.007	.004	.007	.007	.014	19
11	.015	.015	.015	.015	.015	.013	.010		.010	.021	.015	.015	.015	.018	.012	.012	.010	.010	.010			.010	.012	.012	.012	.013	22
12	.012	.015	.012	.012	.015	.015			.010	.015	.019	.018	.021	.018	.015	.015	.015	.015	.010	.007		.007	.012	.007	.007	.013	21
13	.010	.010	.015	.012	.015	.007	.001		.007	.010	.015	.015	.015	.019	.015	.012	.010	.007	.007	.004		.007	.010	.010	.010	.010	22
14	.010	.012	.004	.012					.007	.015	.019	.010	.018	.015	.015	.012	.010	.007	.004								15
15									.019	.004	.010	.015	.012	.012	.007	.004		.001	.004			.004	.007	.010	.012		14
16	.015	.023	.021	.025	.020	.010	.019		.012	.012				.015	.015	.015	.015	.019	.012	.012	.015	.018	.023	.021	.023	.018	20
17	.021	.023	.025	.029	.026	.023	.012		.012	.012	.010	.012	.012	.015	.018	.015	.015	.012	.012	.007		.015	.010			.016	20
18	.015	.007	.012	.007	.007	.010			.015	.019	.034	.032	.032	.029	.020	.018	.015	.015	.010	.010							17
19									.014	.010	.004			.012	.012	.012	.012	.007	.007	.004		.001	.001	.001	.001		14
20	.004	.004	.004	.012	.007				.001	.007	.012	.015	.007	.001								.007	.010	.015	.018		15
21	.012	.021	.012	.023	.034	.012	.010		.018	.019	.026	.026	.021	.002	.019	.015		.010	.007			.007	.007	.007	.017	20
22	.014									.018	.026	.029	.023	.023	.021	.018	.015	.012	.010	.004		.004	.004	.009		14
23	.011									.014	.019	.023	.029	.029	.019	.012	.012	.010	.004			.007		.012		13
24											.004	.012	.015	.018	.018	.015	.015	.012	.007			.012				10
25										.015	.029	.026	.023	.026	.023	.021	.018	.012	.007							10
26	.011	.004								.012	.019	.023	.019	.021	.021	.015	.012	.010	.004							12
27	.011	.001			.014					.004	.010	..12	.015	.015	.012	.010	.007	.007	.001			.001	.001	.001		14
28	.011	.001	.001							.006						.011	.008	.001	.001			.001	.001	.001		11
29	.011									.011	.019	.023	.024	.024	.014	.005	.001		.001			.001	.001	.005		13
30	.010	.008	.011	.014	.011	..11	.001			.001	.001	.001	.001	.001	.008	.018	.024	.011	.001			.001	.001	.001	.007	20

Figure 8. Raw Data Less Than 24 Hours Report.

Raw Data Listing Greater Than or Equal To 24 Hours

GENERAL DESCRIPTION

This report lists raw data observations for intervals of 24 hours, 1 week, 1 month, 3 months, 1 year, or composite data. The data report format varies with the sampling interval, but all intervals have the following items in common: (1) sampling interval in the heading, (2) a complete site description following the heading, and (3) the pollutant name, sample collection and analysis names, data reporting units, and the minimum detectable value for the sampling method. The report begins a new page with a change in interval, site, or pollutant.

For 24-hour data, 1 year of data appears per page in 13 columns, the first containing the days of the month and the next 12 containing data for each month of the year. For each month and the year, the number of observations, the maximum value, and the mean are listed. A monthly mean is computed only if at least two observations are present, and the yearly mean is calculated only if the yearly summary criterion is met. The geometric mean is printed for particulates, and the arithmetic mean is printed for all other pollutants.

For the other reporting intervals, multiple years can be listed per page. For these intervals, the items listed include: the year; the month, week, or sampling period, which is dependent on the interval; the data value; and for composite data, the number of samples in the composite.

RETRIEVAL OPTIONS

This report may be retrieved by the following selection criteria: nation, state, area, site, agency, project, pollutant, method, interval, begin date, end date, AQCR, and county.

Most combinations of the above selection criteria are valid, but the following combinations are invalid: (1) area or county without state, (2) site without state/area, (3) project without agency, and (4) method without pollutant.

The difference between a state/area and state/county retrieval is important--a state/area selection will give the sites in that area (city) while a state/county selection will give all state/area combinations located in that county.

SORT OPTIONS

No optional sorts are available. The standard sort option for the selected data is by interval and by site ID.

SAMPLE REPORTS

Figures 9 and 10 show a report retrieval for 24-hour data and a quarterly composite report, respectively.

RUN DATE(09/12/79

NATIONAL AEROMETRIC DATA BANK
RAW DATA LISTING - 24 HOUR
STATE (1): ALABAMA
YEAR 1976

SITECODE: 01012000201 LOCATION: ANNISTON LATITUDE: 33 D, 41 M, 08 S, N
AGENCY/PROJECT: 201 COUNTY (056D): CALHOUN CO LONGITUDE: 085 D, 50 M, 16 S, W
AGENCY TYPE: STATE SITE ADDR: BLUE MTN POST OFFICE UTM ZONE: 16
CITY POPULATION: 31,633 STATION TYPE (231): SUB/URBAN - COMMERCIAL UTM NORTHING: 3727730
AQCR POPULATION: 499,943 AQCR (00311): EAST ALABAMA UTM EASTING: 0605720
EPA-REGION: 4 CMSA (0000): D NOT IN A STANDARD METROPOLITAN STATIS ELEVATION ABOVE GROUND: 010 FT.
SUPPORTING AGENCY: ALABAMA AIR POLLUTION CONTROL COMM ELEVATION ABOVE MSL: 0610 FT.
COMMENTS: LOCATED ON ROOF OF BLUE MOUNTAIN POST OFFICE DIFF. GMT: WEST 06 HOURS

POLLUTANT: SUSPENDED PART. UNITS: US/CU METER (25 C) MINIMUM DETECTABLE: 1
COLLECTION & ANALYSIS METHOD (41-HI): GRAVIMETRIC

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
	1	-	-	-	-	*	*	*	*	*	*	*	*
	2	*	*	*	*	*	*	*	*	*	*	52	94
	3	*	*	*	*	*	*	*	93	93	96	*	*
	4	*	*	*	*	*	76	39	*	*	*	*	*
D	5	*	51	*	79	98	*	*	*	*	*	*	*
	6	*	*	38	*	*	*	*	*	*	*	*	*
A	7	*	*	*	*	*	*	*	*	*	*	*	*
	8	*	*	*	*	*	*	*	*	*	*	41	38
Y	9	*	*	*	*	*	*	*	*	58	33	*	*
	10	*	*	*	*	*	82	87	*	*	*	*	*
	11	*	*	*	60	82	*	*	*	*	*	*	*
O	12	18	*	74	*	*	*	*	*	*	*	*	*
	13	*	*	*	*	*	*	*	*	*	*	*	*
F	14	*	*	*	*	*	*	*	*	*	*	71	71
	15	*	*	*	*	*	*						
	16	*	*	*									
	27	*	*	*	*	*	*	*	*	34	53	*	*
	28	*	*	*	*	*	96	98	30	*	*	*	*
	29	*	102	*	*	92	*	*	*	*	*	*	*
	30	*	*	37	*	*	*	*	*	*	*	*	*
	31	*	*	*	*	*	*	*	*	*	*	*	*
NBR OBS:		2	4	5	4	5	5	5	5	4	4	5	5
MAX VALUE:		24	102	94	79	92	93	91	102	69	96	91	94
GEO MEAN:		20	58	39	69	94	89	83	57	45	38	56	50

NBR OBS: 53 MAX VALUE: 102 MEAN VALUE: 61 IS GEOMETRIC FOR PARTICULATE ARITHMETIC FOR ALL OTHERS

Figure 9. Data for 24-Hour Report.

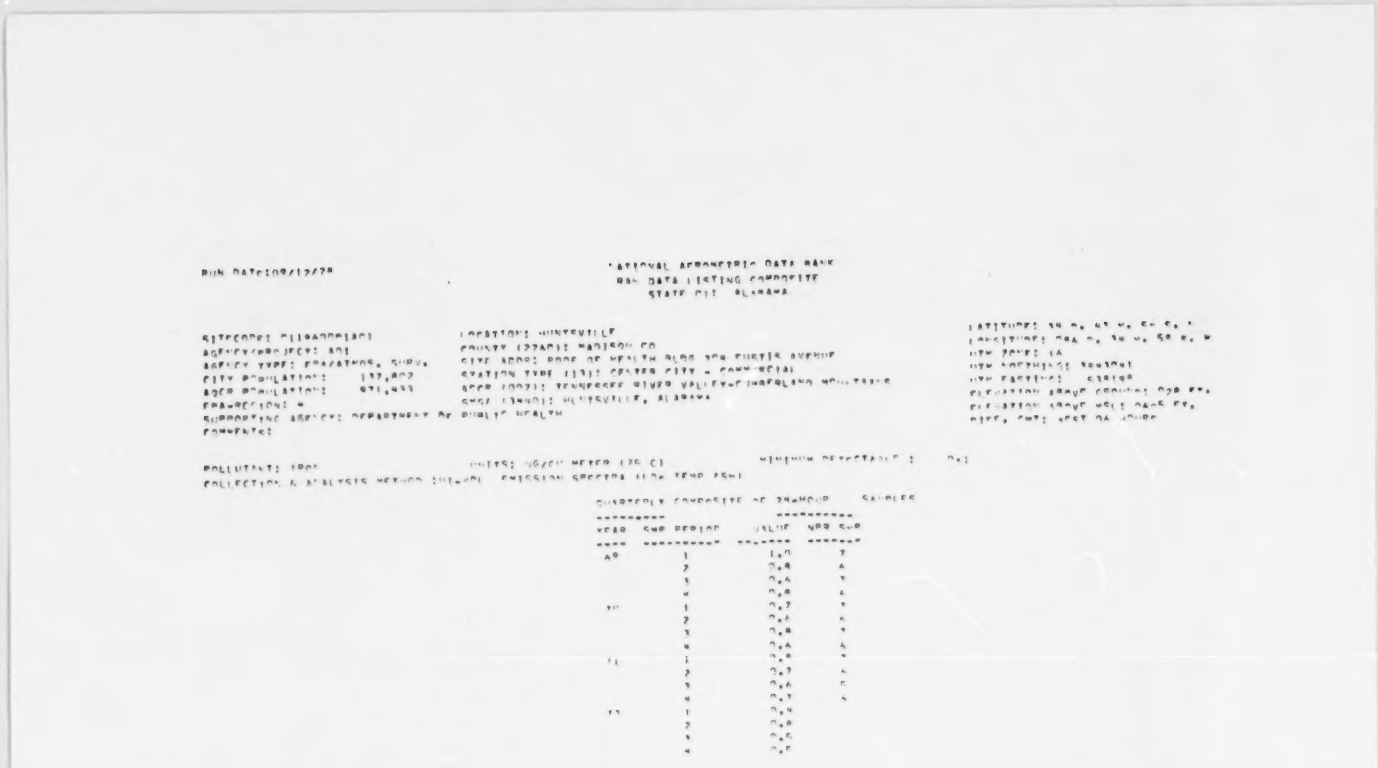


Figure 10. Data for Composite Report.

Standards Violations Reports

GENERAL DESCRIPTION

These reports show, for each pollutant-site combination within the geographical region specified, the number of occasions within the period of time specified when the National Ambient Air Quality Standards (NAAQSs) were violated. Violations for pollutants having both primary and secondary standards are shown separately for each type of standard. The standard format site description information appears at the top of the sheet with the designation of pollutant-interval combination above it, along with the State Code and date of the data. Below the site description data, the body of the report consists of columns of data containing the individual hourly or daily observations for the pollutant in question. Every time that the appropriate standard was exceeded, a symboi (* or +) is piaced beside the observation to identify the time and date of the violation. For the monthly reports, the number of observations and the mean value are tabulated for each day at the right-hand side of the paper; and the number of observations, maximum value, and arithmetic mean are listed for each hour of the day at the bottom of each column. For yearly reports, the same data are provided, but on a monthly basis. Below these figures are given the total number of observations for the month (or year), the percentage of possible observations, the number of times that the respective standards were exceeded, the arithmetic or geometric mean and standard deviation, as appropriate, with accompanying statements as to whether the primary and secondary standards were met or exceeded (for those pollutants having standards based on those parameters). Along the bottom of the page, identifications by name of the methods of collection and analysis are given, together with a statement defining the time used (whether standard or daylight saving).

The following reports are available:

1. Particulate (total suspended particulates).
2. Sulfur dioxide, daily values.
3. Sulfur dioxide, 24-hour averages.
4. Sulfur dioxide, 3-hour averages.
5. Sulfur dioxide, 1-hour averages.

6. Carbon monoxide, hourly averages.
7. Carbon monoxide, 8-hour averages.
8. Total oxidants.
9. Ozone.
10. Nitrogen dioxide, daily values.
11. Nitrogen dioxide, hourly values.

RETRIEVAL OPTIONS

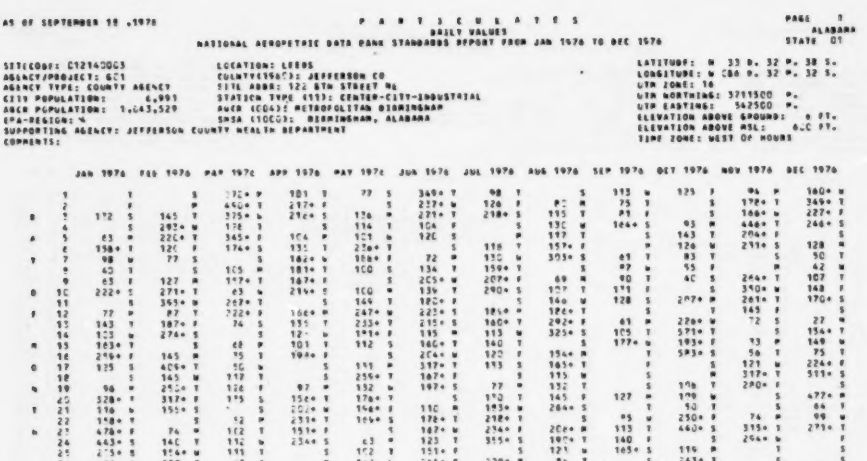
Once the basic selections of pollutant type and averaging interval have been made, the standards reports may be retrieved by state, area, site, begin date, end date, county, and AQCR.

SORT OPTIONS

There are no optional sorts available.

SAMPLE REPORT

Figure 11 shows a sample yearly report for particulate, and Figure 12 gives a sample monthly report for 3-hour running averages for sulfur dioxide.



AS OF SEPTEMBER 19 ,1978 — P A R T I C U L A T E S — PAGE 1

DAILY VALUES — ALABAMA

NATIONAL AEROMETRIC DATA BANK STANDARDS REPORT FROM JAN 1976 TO DEC 1976 — STATE 01

SITECODE: 010140003 — LOCATION: LEEDS — LATITUDE: N 33 D. 32 M. 38 S.

AGENCY/PROJECT: 001 — COUNTY(3): JEFFERSON CO — LONGITUDE: W 086 D. 32 M. 32 S.

AGENCY TYPE: COUNTY AGENCY — SITE ADDR: 122 8TH STREET NE — UTM ZONE: 16

CITY POPULATION: 6,993 — STATION TYPE (13): CENTER-CITY-INDUSTRIAL — UTM NORTHING: 3711500 M.

AQCR POPULATION: 1,643,529 — AQCR (004): METROPOLITAN BIRMINGHAM — UTM EASTING: 542500 M.

EPA-REGION: 4 — SMSA (1060): BIRMINGHAM, ALABAMA — ELEVATION ABOVE GROUND: 0 FT.

SUPPORTING AGENCY: JEFFERSON COUNTY HEALTH DEPARTMENT — ELEVATION ABOVE MSL: 600 FT.

COMMENTS: — TIME ZONE: WEST OF HOURS

	JAN 1976	FEB 1976	MAR 1976	APR 1976	MAY 1976	JUN 1976	JUL 1976	AUG 1976	SEP 1976	OCT 1976	NOV 1976	DEC 1976
1		Y	S	132+ P	101 J	77 S	340+ T	98 T	S	113 W	125 F	94 P	160+ W
2		F	M	440+ T	237+ F	S	237+ W	126 F	82 M	75 T	S	172+ T	349+ T
3	172 S	145 T	325+ W	276+ S	176 M	271+ T	218+ S	195 T	91 F	S	166+ W	227+ F
4	S	292+ W	178 T	S	114 T	104 F	S	130 W	164+ S	93 M	446+ T	246+ S
5	83 M	226+ T	365+ F	104 M	101 W	120 S	M	197 T	S	143 T	204+ F	S
6	158+ T	120 F	174+ S	133 T	220+ T	S	118 T	157+ F	M	126 W	231+ S	128 M
7	98 W	77 S	S	182+ W	118+ F	72 M	132 W	203+ S	61 T	83 T	S	50 T
8	62 T	M	105 M	181+ T	100 S	134 T	159+ T	S	97 W	55 F	M	42 M
9	63 F	127 M	197+ T	167+ F	S	205+ W	207+ F	69 M	90 T	40 S	244+ T	107 T
10	222+ S	271+ T	63 W	219+ S	100 M	139 T	290+ S	157 T	171 F	S	350+ W	148 F
11	S	365+ W	267+ T	S	149 T	180+ F	S	146 W	128 S	207+ M	261+ T	170+ S
12	72 M	97 T	222+ F	166+ M	247+ W	221+ S	184 M	126+ T	S	T	165 F	S
13	143 T	187+ F	74 S	135 T	233+ T	215+ S	160+ T	292+ F	61 M	226+ W	72 S	27 W
14	123 W	274+ S	S	121 W	191+ F	195 M	113 W	325+ S	105 T	571+ T	S	154+ T
15	183+ T	S	68 M	101 T	112 S	166+ T	140 T	S	177+ W	193+ F	73 M	149 W
16	259+ F	145 M	95 T	198+ F	S	204+ W	122 F	154+ M	T	593+ S	56 T	75 T
17	125 S	409+ T	50 W	S	111 M	197+ T	193 S	165+ T	F	S	121 W	224+ F
18	S	145 W	112 T	S	256+ T	187+ F	S	115 W	S	W	312+ T	111+ S
19	98 M	252+ T	128 F	87 M	152 W	197+ S	77 M	152 T	S	104 T	280+ F	S
20	328+ T	317+ F	175 S	152+ T	178+ T	S	172 T	145 F	M	199 W	S	472+ M
21	110 W	155+ S	S	202+ W	194+ F	110 M	193+ W	284+ S	T	50 T	S	64 T
22	198+ T	S	52 M	231+ T	169+ S	178+ T	218+ T	S	95 W	250+ F	76 M	99 W
23	478+ F	76 W	112 T	151+ F	S	187+ W	234+ F	206+ M	113 T	460+ S	115+ T	279+ T
24	443+ S	146 T	152 W	234+ S	63 M	123 T	115+ S	197+ T	140 F	S	204+ W	F
25	273+ S	154+ W	115 T	S	172 T	151+ F	S	121 W	165+ S	119 M	T	S
26	64 M	139 T	82 F	M	142 W	205+ S	229+ M	96 T	S	243+ T	F	S
27	54 T	215+ F	54 S	61 T	148 T	S	209+ T	124 F	M	83 W	S	121 M
28	178 W	275+ S	S	192 W	116 F	87 M	171+ W	157+ S	T	132 T	S	579+ T
29	98 T	S	96 M	101 T	112+ T	151+ T	238+ T	S	W	156+ F	96 M	W
30	298+ F		173 T	101 F	T	196+ W	416+ F	174 M	T	110 S	93 T	400+ T
31	S		66 W	M			S	112 T		S		F
0	25	23	27	24	25	27	25	28	27	25	23	
MAX	478	409	276	234	342	349	416	325	177	593	446	579
GEO-MEAN	171	181	179	140	147	186	172	147	108	143	152	151

TOTAL SAMPLES = 365 — 44 STARRED (+) ITEMS EXCEEDED THE PRIMARY STANDARD OF 260 MICROGRAMS PER CUBIC METER

134 PLUSSED (+) ITEMS EXCEEDED THE SECONDARY STANDARD OF 150 MICROGRAMS PER CUBIC METER

GEOMETRIC MEAN = 166 — PRIMARY STANDARD CP 75 MICROGRAMS PER CUBIC METER WAS EXCEEDED

GEOMETRIC STANDARD DEVIATION = 1.8 — SECONDARY STANDARD CP 60 MICROGRAMS PER CUBIC METER WAS EXCEEDED

COLLECTION METHOD: HI-VOL — ANALYSIS METHOD: GRAVIMETRIC — ALL TIMES ARE STANDARD TIME

Figure 11. Standards Report - Particulate Sampling.

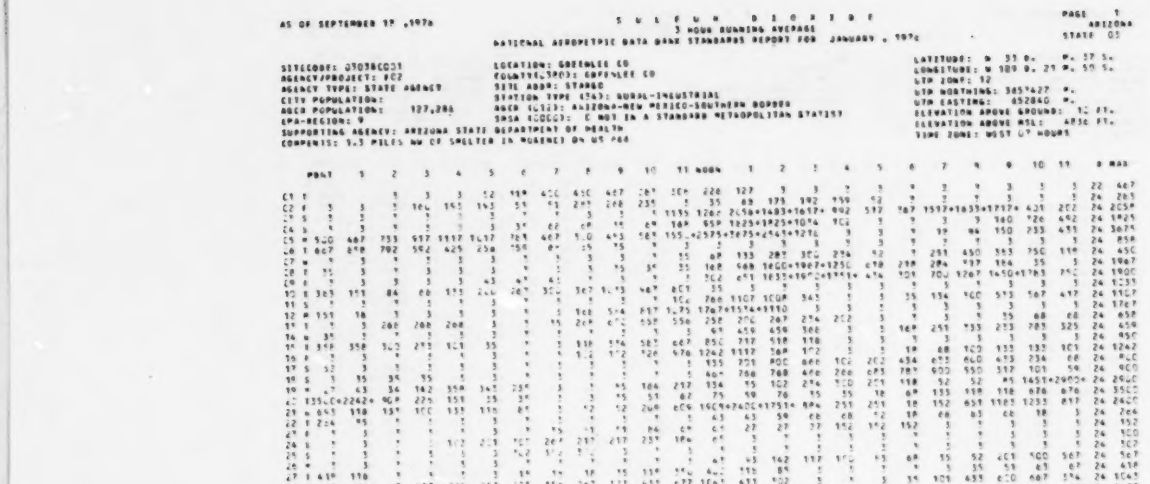


Figure 12. Standards Report - 3-Hour Averages for Sulfur Dioxide.

Site Description Inventory

GENERAL DESCRIPTION

This report lists, in a standard site description format, information concerning the environment and operating characteristics of the given sampling site or sites. The site description information is arranged in three blocks across the page, each block containing six to eight lines of information. The various codes, as set forth in AEROS Manual of Codes, are provided for the various station parameters, and each is defined by name. These codes include those for the state, area, agency/project, EPA Region, county, station type, AQCR, SMSA, and UTM zone. The actual numerical values are also provided for the city and AQCR populations, as well as for various geographic parameters including the latitude and longitude of the sampling site, its UTM grid coordinates, the elevation of the sampling probe above the ground and above MSL, and the time differential between local standard time and GMT. In addition, the name of the location is given, along with the name of the supporting agency and any appropriate comments.

RETRIEVAL OPTIONS

The site description data can be retrieved by state, area, site, agency, project, AQCR, county, and any appropriate combination of the above.

SORT OPTIONS

This report can be sorted by state, area, site, agency, project, county, and AQCR.

SAMPLE REPORT

A Site Description Inventory for four sites in Rhode Island is shown in Figure 13.

```
RUN DATE:091278                          NATIONAL AEROMETRIC DATA BANK                          PAGE:41-    1
                                          SITE FILE LISTING
                                        STATE (41) RHODE ISLAND

SITE CODE: 41L040001F01          LOCATION: BRISTOL                        LATITUDE: 41 D. 40 M. 26 S. N
AGENCY/PROJECT: F01              COUNTY (0060): BRISTOL CO                LONGITUDE:  71 D. 16 M. 18 S. W
AGENCY TYPE: STATE               SITE ADDR: REYNOLDS ELEMENTARY SCHOOL    UTM ZONE: 19
CITY POPULATION:      17,860     STATION TYPE (22): SUBURBAN - RESIDENTIAL UTM NORTHING: 4615800 METERS
AQCR POPULATION:  1,645,380      AQCR (12C): METROPOLITAN PROVIDENCE      UTM EASTING:   310900 METERS
EPA REGION:  1                   SMSA (6480): PROVIDENCE-PAWTUCKET-WARWICK, R.I.-MASS. ELEVATION ABOVE GROUND:  40 FT.
SUPPORT AGENCY: RHODE ISLAND DEPARTMENT OF HEALTH                         ELEVATION ABOVE MSL   :   90 FT.
COMMENTS:                                                                 DIFF.GMT: WEST 05 HOURS
                                                                          RECORD LAST UPDATED:   /  /

SITE CODE: 41C065001F01          LOCATION: BURRILLVILLE                   LATITUDE: 41 D. 58 M.  9 S. N
AGENCY/PROJECT: F01              COUNTY (0320): PROVIDENCE CO             LONGITUDE:  71 D. 39 M. 48 S. W
AGENCY TYPE: STATE               SITE ADDR: BURRILLVILLE HIGH SCHOOL      UTM ZONE: 19
CITY POPULATION:      10,087     STATION TYPE (22): SUBURBAN - RESIDENTIAL UTM NORTHING: 4649500 METERS
AQCR POPULATION:  1,645,380      AQCR (12C): METROPOLITAN PROVIDENCE      UTM EASTING:   279300 METERS
EPA REGION:  1                   SMSA (6480): PROVIDENCE-PAWTUCKET-WARWICK, R.I.-MASS. ELEVATION ABOVE GROUND:  20 FT.
SUPPORT AGENCY: RHODE ISLAND DEPARTMENT OF HEALTH                         ELEVATION ABOVE MSL   :  370 FT.
COMMENTS:                                                                 DIFF.GMT: WEST 05 HOURS
                                                                          RECORD LAST UPDATED:   /  /

SITE CODE: 41D090001F01          LOCATION: CHARLESTOWN                    LATITUDE: 41 D. 22 M.  3 S. N
AGENCY/PROJECT: F01              COUNTY (0380): WASHINGTON CO             LONGITUDE:  71 D. 39 M. 37 S. W
AGENCY TYPE: STATE               SITE ADDR: NAVAL AIR STATION             UTM ZONE: 19
CITY POPULATION:       2,863     STATION TYPE (22): SUBURBAN - RESIDENTIAL UTM NORTHING: 4582700 METERS
AQCR POPULATION:  1,645,380      AQCR (12C): METROPOLITAN PROVIDENCE      UTM EASTING:   277500 METERS
EPA REGION:  1                   SMSA (0000): C NOT IN A STANDARD METROPOLITAN STATIST ELEVATION ABOVE GROUND:  60 FT.
SUPPORT AGENCY: RHODE ISLAND DEPARTMENT OF HEALTH                         ELEVATION ABOVE MSL   :   70 FT.
COMMENTS: DISCONTINUED, 4/28/73                                           DIFF.GMT: WEST 05 HOURS
                                                                          RECORD LAST UPDATED:   /  /

SITE CODE: 41D090002F02          LOCATION: CHARLESTOWN                    LATITUDE: 41 D. 25 M. 59 S. N
AGENCY/PROJECT: F02              COUNTY (0380): WASHINGTON CO             LONGITUDE: 071 D. 40 M. 47 S. W
AGENCY TYPE: STATE               SITE ADDR: UNITED NEUCLEAR               UTM ZONE: 19
CITY POPULATION:       2,863     STATION TYPE (34): RURAL - INDUSTRIAL    UTM NORTHING: 4590100 METERS
AQCR POPULATION:  1,645,380      AQCR (12C): METROPOLITAN PROVIDENCE      UTM EASTING:   276100 METERS
EPA REGION:  1                   SMSA (0000): C NOT IN A STANDARD METROPOLITAN STATIST ELEVATION ABOVE GROUND:      FT.
SUPPORT AGENCY: R.I. STATE DEPT OF HEALTH, DIV. OF AIR POLLUTION CONTROL  ELEVATION ABOVE MSL   :   65 FT.
COMMENTS:                                                                 DIFF.GMT: WEST 05 HOURS
                                                                          RECORD LAST UPDATED: 05/15/78
```

Figure 13. Site Description Inventory Report.

Raw Data in SAROAD Format

GENERAL DESCRIPTION

The report creates a magnetic tape of the raw data in the same form as it was originally entered into the SAROAD data base.

RETRIEVAL OPTIONS

There are several key items upon which retrieval may be made by using the SAROAD Standard Format Selection procedure, including: state, area, site, agency type, AQCR, project classification, pollutant, method of collection and analysis, sampling interval, and starting and ending dates. Certain combinations of selections keys are prohibited. For example, a site key may be entered only if an area key is also entered, and an area key may be entered only if a state key is also entered. Similarly, a project classification code may be included only if an agency type is also specified, and a method of collection and analysis may be specified only if a pollutant type is also specified. All other combinations may be considered as valid retrieval requests. The period of interest is specified by year and month for the starting and ending dates.

SORT OPTIONS

There are no sort options available.

SAMPLE REPORT

Figures 14 to 16 give the type and sequencing of data contained in the report. The output is available on magnetic tape.

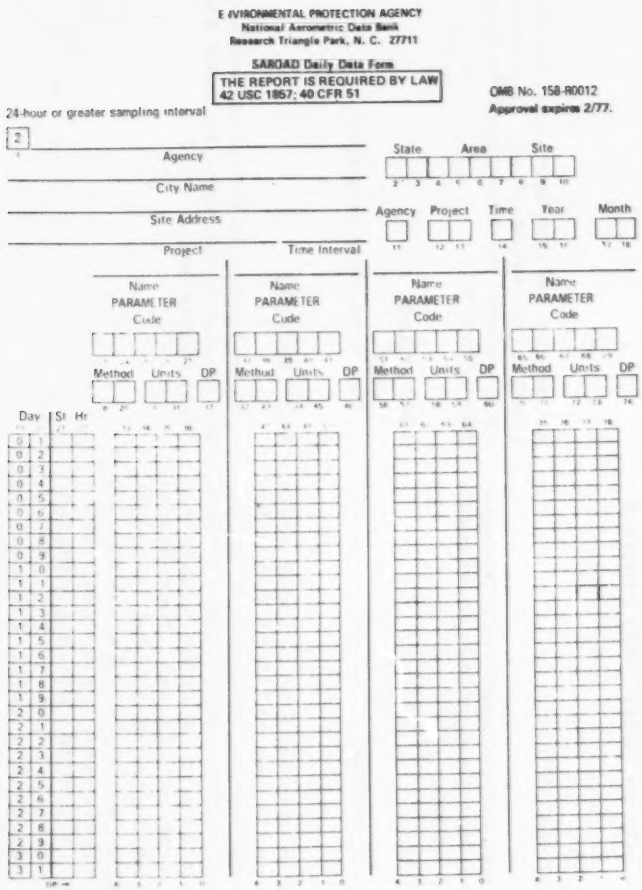


Figure 14. SAROAD Daily Data Form.

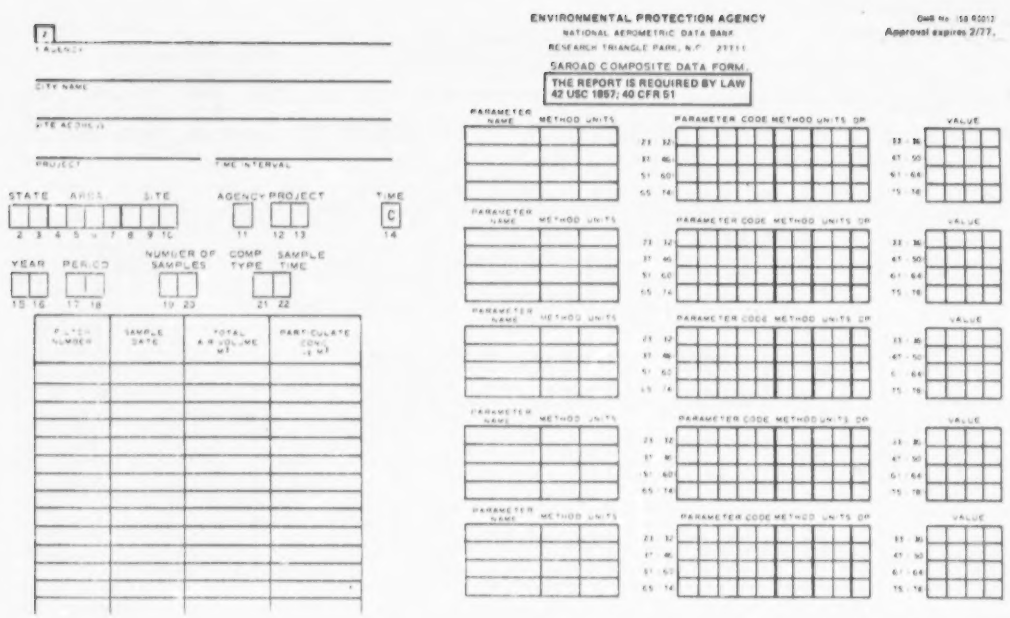


Figure 15. SAROAD Composite Data Form.

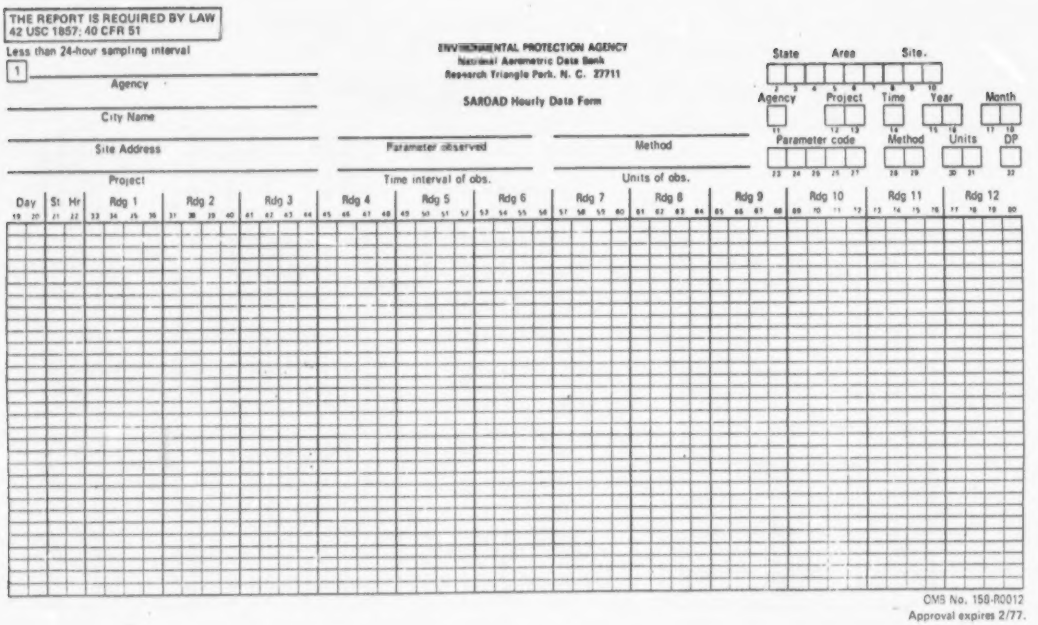


Figure 16. SAROAD Hourly Data Form.

Meteorological Raw Data Reports

GENERAL DESCRIPTION

SAROAD has the capability to store, retrieve, and display meteorological data in report and plotted form; however, regional or national SAROAD contacts should be consulted to determine whether the desired data are available.

Report capabilities provide for printing the site description at the top of the page, then the parameter-method-unit names, and the raw data values for one month. Each line contains up to 24 raw data values, the mean, and the number of observations for each day. This line is repeated for each day in the month. At the bottom of the page, the minimum, maximum, average, and number of observations are given for each hour of the day for that month. A second report provides for the site description and the parameter-method-unit names at the top and lists the minimum, the hour of the minimum, the maximum, the hour of the maximum, the mean, and the number of observations for each day of the month.

A plot of the data can be generated on either a CALCOMP plotter or a TEXTRONIX terminal. A separate plot is created for each month of data. The daily minimums, maximums, and means for a specific parameter for each day of the month are plotted with descriptive information on the site and parameter. The plot is a separate report and may be omitted if only the raw data listing is required.

RETRIEVAL OPTIONS

The meteorological raw data reports and plots may be retrieved by state, area, site, agency, project, pollutant (only 6XXXX), method units, start and end date, and any appropriate combination of the above.

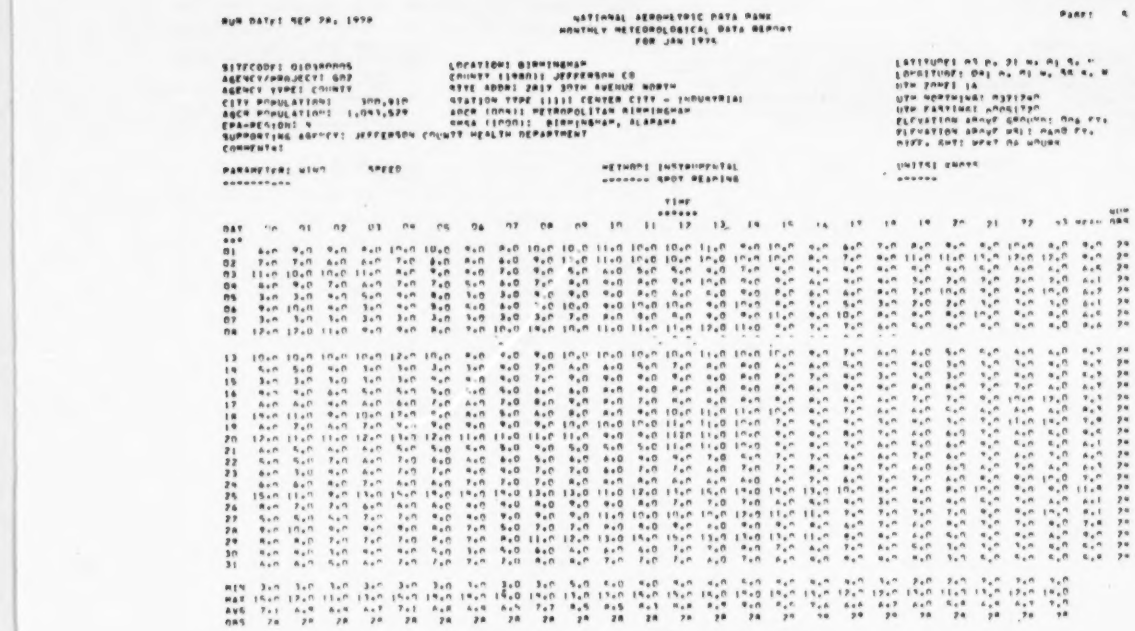
For the plots, the minimum scale value and a delta value may be specified by the user, or, if omitted, they are calculated by the program. The user can also specify what values (daily minimum, maximum, and/or mean) are plotted.

SORT OPTIONS

No optional sorts are available for this report. The report is printed according to the order on file, i.e., state/area/site/agency/project/pollutant/year/month.

SAMPLE REPORT

Figures 17 to 19 show examples for wind speed for a site in Birmingham, Alabama, for January 1975.



RUN DATE: SEP 28, 1979

NATIONAL AEROMETRIC DATA BANK
MONTHLY METEOROLOGICAL DATA REPORT
FOR JAN 1974

PAGE 1

SITECODE: 010890006
AGENCY/PROJECT: GAP
AGENCY TYPE: COUNTY
CITY POPULATION: 300,910
AQCR POPULATION: 1,093,529
EPA-REGION: 4
SUPPORTING AGENCY: JEFFERSON COUNTY HEALTH DEPARTMENT
COMMENTS:

LOCATION: BIRMINGHAM
COUNTY (1980): JEFFERSON CO
STE ADDR: 2817 30TH AVENUE NORTH
STATION TYPE (1): CENTER CITY - INDUSTRIAL
AQCR (2041): METROPOLITAN BIRMINGHAM
AREA (1980): BIRMINGHAM, ALABAMA

LATITUDE: 33 D, 31 M, 01 S, N
LONGITUDE: 086 D, 49 M, 58 S, W
GMT ZONE: 6
UTM NORTHING: 3731340
UTM EASTING: 490170
ELEVATION ABOVE DATUM: 806 FT.
ELEVATION ABOVE MSL: 0000 FT.
MISC. INFO: SPEC 00 HOURS

PARAMETER: WIND SPEED

METHOD: INSTRUMENTAL
SPOT READING

UNITS: KNOTS

TIME

DAY	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	WIND DIR
01	4.0	9.0	9.0	8.0	10.0	10.0	9.0	8.0	10.0	10.0	10.0	10.0	10.0	11.0	9.0	10.0	9.0	7.0	8.0	9.0	8.0	10.0	9.0	9.0	29
02	7.0	7.0	6.0	6.0	7.0	8.0	8.0	6.0	9.0	11.0	11.0	10.0	10.0	10.0	10.0	10.0	8.0	7.0	9.0	11.0	11.0	11.0	12.0	12.0	29
03	11.0	10.0	10.0	11.0	8.0	9.0	8.0	7.0	9.0	5.0	6.0	5.0	5.0	9.0	7.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	29
04	8.0	9.0	7.0	6.0	7.0	7.0	5.0	6.0	7.0	8.0	9.0	8.0	9.0	10.0	9.0	9.0	8.0	8.0	7.0	6.0	6.0	5.0	5.0	5.0	29
05	3.0	3.0	9.0	5.0	9.0	8.0	3.0	3.0	9.0	9.0	8.0	6.0	6.0	9.0	8.0	8.0	8.0	7.0	10.0	9.0	9.0	10.0	9.0	9.0	29
06	9.0	10.0	9.0	3.0	9.0	9.0	6.0	6.0	7.0	10.0	9.0	10.0	10.0	9.0	10.0	9.0	9.0	9.0	9.0	3.0	3.0	3.0	3.0	6.0	29
07	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	7.0	8.0	8.0	8.0	9.0	9.0	9.0	11.0	9.0	10.0	8.0	8.0	8.0	10.0	9.0	8.0	29
08	12.0	17.0	11.0	9.0	9.0	8.0	7.0	10.0	14.0	10.0	11.0	11.0	11.0	12.0	11.0	9.0	7.0	7.0	6.0	5.0	6.0	6.0	6.0	9.0	29
13	10.0	10.0	10.0	10.0	12.0	10.0	9.0	9.0	9.0	10.0	10.0	10.0	10.0	11.0	10.0	10.0	9.0	7.0	6.0	5.0	5.0	4.0	4.0	4.0	29
14	5.0	5.0	9.0	3.0	3.0	3.0	3.0	9.0	7.0	6.0	6.0	7.0	8.0	9.0	8.0	6.0	6.0	5.0	6.0	5.0	5.0	5.0	6.0	5.0	29
15	3.0	3.0	3.0	3.0	3.0	9.0	9.0	7.0	9.0	9.0	9.0	9.0	9.0	9.0	8.0	7.0	6.0	3.0	3.0	3.0	3.0	6.0	6.0	6.0	29
16	9.0	9.0	6.0	5.0	5.0	5.0	6.0	9.0	6.0	6.0	9.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	7.0	7.0	7.0	6.0	6.0	29
17	6.0	6.0	9.0	6.0	6.0	7.0	6.0	7.0	8.0	9.0	9.0	7.0	8.0	8.0	8.0	8.0	8.0	7.0	6.0	6.0	5.0	6.0	6.0	6.0	29
18	14.0	11.0	9.0	10.0	12.0	9.0	8.0	8.0	8.0	8.0	9.0	10.0	11.0	11.0	10.0	9.0	7.0	6.0	6.0	5.0	5.0	5.0	11.0	14.0	29
19	6.0	7.0	6.0	7.0	9.0	9.0	9.0	9.0	9.0	10.0	10.0	10.0	11.0	11.0	10.0	7.0	9.0	8.0	7.0	6.0	6.0	5.0	6.0	6.0	29
20	12.0	11.0	11.0	12.0	13.0	12.0	11.0	11.0	11.0	9.0	9.0	11.0	11.0	10.0	9.0	9.0	8.0	7.0	6.0	6.0	7.0	6.0	6.0	6.0	29
21	6.0	5.0	6.0	6.0	5.0	5.0	5.0	8.0	9.0	8.0	5.0	5.0	11.0	11.0	10.0	9.0	9.0	7.0	6.0	6.0	5.0	6.0	6.0	6.0	29
22	5.0	5.0	7.0	6.0	7.0	6.0	6.0	6.0	9.0	6.0	6.0	9.0	9.0	7.0	8.0	8.0	7.0	7.0	6.0	6.0	6.0	7.0	6.0	7.0	29
23	6.0	5.0	9.0	6.0	7.0	7.0	9.0	9.0	7.0	7.0	6.0	7.0	7.0	6.0	7.0	7.0	8.0	8.0	7.0	6.0	6.0	6.0	7.0	6.0	29
24	6.0	8.0	8.0	7.0	6.0	8.0	7.0	7.0	7.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	7.0	7.0	6.0	7.0	6.0	6.0	9.0	10.0	29
25	15.0	11.0	9.0	13.0	14.0	14.0	14.0	14.0	13.0	13.0	11.0	12.0	11.0	15.0	14.0	14.0	13.0	10.0	8.0	8.0	10.0	9.0	9.0	11.0	29
26	8.0	7.0	7.0	6.0	6.0	6.0	9.0	9.0	9.0	9.0	9.0	8.0	7.0	7.0	7.0	6.0	9.0	9.0	3.0	9.0	9.0	6.0	7.0	6.0	29
27	5.0	6.0	5.0	7.0	7.0	9.0	9.0	9.0	9.0	11.0	10.0	10.0	10.0	10.0	12.0	11.0	11.0	7.0	7.0	7.0	7.0	7.0	9.0	10.0	29
28	9.0	10.0	9.0	9.0	9.0	9.0	7.0	5.0	7.0	7.0	9.0	8.0	8.0	9.0	9.0	8.0	6.0	7.0	6.0	6.0	6.0	6.0	9.0	9.0	29
29	8.0	8.0	7.0	7.0	7.0	8.0	7.0	8.0	11.0	12.0	13.0	15.0	15.0	13.0	13.0	13.0	11.0	8.0	8.0	6.0	5.0	5.0	6.0	6.0	29
30	6.0	6.0	5.0	6.0	6.0	5.0	5.0	6.0	6.0	6.0	6.0	7.0	7.0	9.0	7.0	6.0	7.0	7.0	6.0	5.0	5.0	5.0	6.0	6.0	29
31	6.0	6.0	5.0	6.0	7.0	7.0	7.0	7.0	8.0	6.0	7.0	7.0	7.0	6.0	7.0	6.0	6.0	6.0	6.0	5.0	5.0	5.0	6.0	6.0	29
MIN	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	5.0	5.0	5.0	5.0	6.0	6.0	5.0	5.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
MAX	15.0	17.0	11.0	13.0	14.0	14.0	14.0	14.0	14.0	13.0	13.0	15.0	15.0	15.0	14.0	14.0	13.0	12.0	13.0	13.0	11.0	13.0	12.0	14.0	
AVG	7.1	6.9	6.6	6.7	7.1	6.8	6.6	6.5	7.7	8.5	8.5	8.1	8.2	9.9	9.0	8.6	6.6	6.3	6.0	5.8	6.0	6.1	6.7	7.0	
OBS	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	

Figure 17. Meteorological Raw Data Format.

RUN DATE: SEP 29, 1979

NATIONAL AEROMETRIC DATA BANK
MONTHLY METEOROLOGICAL DATA REPORT
FOR JAN 1975

SITECODE: 010380005
AGENCY/PROJECT: GDZ
AGENCY TYPE: COUNTY
CITY POPULATION: 300,910
AQCR POPULATION: 1,093,429
EPA-REGION: 4
SUPPORTING AGENCY: JEFFERSON COUNTY HEALTH DEPARTMENT
COMMENTS:

LOCATION: BIRMINGHAM
COUNTY (1980): JEFFERSON CO
SITE ADDR: 2817 30TH AVENUE NORTH
STATION TYPE (111): CENTER CITY - INDUSTRIAL
AQCR (004): METROPOLITAN BIRMINGHAM
AREA (10000): BIRMINGHAM, ALABAMA

LATITUDE: 33 D. 31 M. 01 S. N
LONGITUDE: 086 D. 51 M. 55 S. W
UTM ZONE: 16
UTM NORTHING: 3731760
UTM EASTING: 0506720
ELEVATION ABOVE GROUND: 000 FT.
ELEVATION ABOVE MSL: 0600 FT.
DIFF. AMT: WEST OR HOURS

UNITS: KNOTS

PARAMETER: WIND SPEED

METHOD: INSTRUMENTAL
ROOT MEANING

RAW	MIN	HR. OF MIN	MAX	HR. OF MAX	MEAN	AUM OBS
1	4.0	00	11.0	10	9.0	24
2	4.0	02	13.0	21	9.0	24
3	4.0	13	11.0	00	8.5	24
4	2.0	20	10.0	13	8.1	24
5	3.0	00	10.0	20	8.2	24
6	2.0	19	10.0	01	8.1	24
7	3.0	00	11.0	15	8.5	24
8	4.0	20	14.0	08	8.6	24
9	4.0	00	9.0	19	8.5	19
10						0
11						0
12	10.0	21	13.0	19	11.0	9
13	5.0	20	12.0	04	8.7	24
14	3.0	03	8.0	13	6.7	24
15	3.0	00	9.0	09	5.7	24
16	4.0	00	8.0	11	6.7	24
17	4.0	02	12.0	23	7.3	24
18	5.0	07	14.0	00	8.3	24
19	3.0	18	14.0	23	7.9	24
20	5.0	23	13.0	04	9.5	24
21	4.0	08	11.0	12	6.1	24
22	4.0	11	7.0	02	6.0	24
23	3.0	01	8.0	06	6.3	24
24	4.0	00	10.0	23	7.0	24
25	4.0	18	15.0	00	11.0	24
26	3.0	18	9.0	09	6.1	24

Figure 18. Meteorological Raw Data Report.

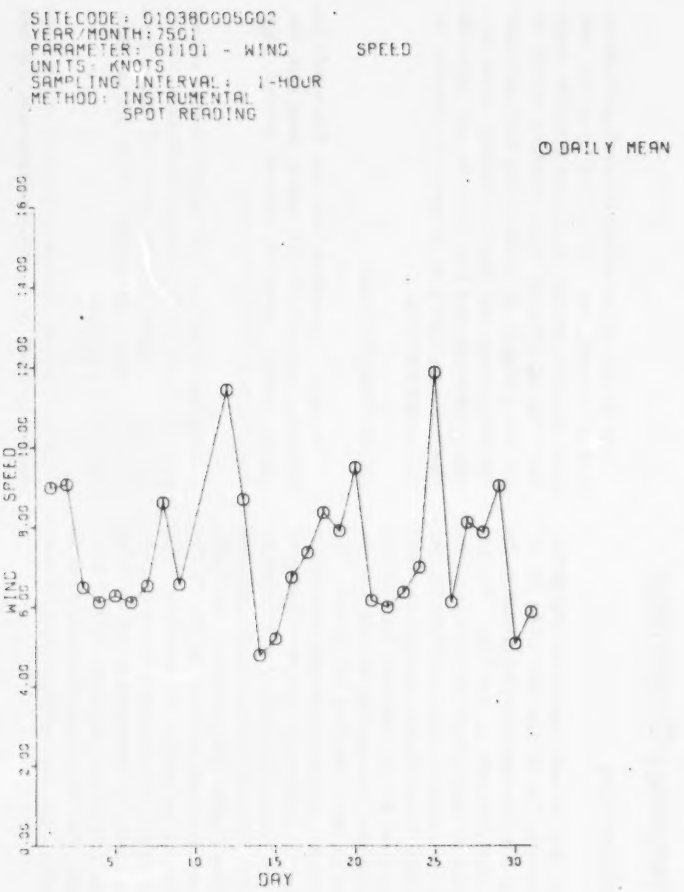


Figure 19. Meteorological Raw Data Plot.

Yearly Frequency Distribution

GENERAL DESCRIPTION

This report lists the site description and annual summary information for all data that satisfy the retrieval criteria. The site description is repeated at the top of each page, followed by the data. The site description gives the geographical information necessary to locate the site and is separated from the data by a data heading. Below the data heading, the codes and names are given for the pollutant, the sampling and analysis methods, the sampling interval, and the standard units in which the data are printed. The data items include: the year of the data; the percent of observations for continuous data; the number of observations; the number of primary and secondary violations of the NAAQSs; the minimum detectable for the sampling method; the minimum, maximum, and second maximum observations; the 10, 30, 50, 70, 90, 95, and 99 percentiles; the arithmetic mean; the geometric mean; and the geometric standard deviation. The number of violations of the NAAQSs represents the number of violations of the short-term standards. For the running averages, the number of violations are for nonoverlapping running averages.

The retrieval and print options, which are based on summary criteria, are: (1) print all data that meet other selection criteria but do not print the means and standard deviation when summary criteria are not met (default), (2) print all data that meet other selection criteria and flag the statistics when summary criteria are not met, (3) print only data that meet summary criteria, or (4) print only data that fail the summary criteria.

RETRIEVAL OPTIONS

The report is generated from data that satisfy the following selection criteria: nation, state, area, site, agency, project, pollutant, method, interval, begin year, end year, AQCR, and county.

Most combinations of the above selection criteria are valid, but the following combinations are invalid: (1) area or county without state, (2) site without state/area, (3) project without agency, and (4) method without pollutant.

The difference between a state/area and a state/county retrieval is important—a state/area selection

will only give the sites in that area (city) while a state/county selection will give all state/area combinations located in that county.

SORT OPTIONS

This report may be sorted in ascending (default) or descending order by the following options: state, area, site, agency, project, AQCR, pollutant, method, units, interval, year, pollutant value, and county code. For this report, the pollutant value sort is on the yearly maximum observed value. Any number of sorts can be specified in any desired order, but certain sort combinations may produce a confusing report.

SAMPLE REPORT

Figure 20 shows a Yearly Frequency Distribution Report for particulate, carbon monoxide, and sulfur dioxide for a site in Providence, Rhode Island.

09-12-78

NATIONAL AEROMETRIC DATA BANK
YEARLY FREQUENCY DISTRIBUTION
STATE (41): RHODE ISLAND

SITECODE: 410300005F01
AGENCY/PROJECT: F01
AGENCY TYPE: STATE
CITY POPULATION: 179,213
AQCR POPULATION: 1,045,380
EPA-REGION: 1
SUPPORTING AGENCY: RHODE ISLAND DEPARTMENT OF HEALTH
COMMENTS: PROVIDENCE STATION 8

LOCATION: PROVIDENCE
COUNTY (C52C): PROVIDENCE CO
SITE ADDR: STATE OFFICE BUILDING
STATION TYPE (113): CENTER CITY - INDUSTRIAL
AQCR (112C): METROPOLITAN PROVIDENCE
SMSA (049C): PROVIDENCE-PAWTUCKET-WARWICK, R.I.-MASS

LATITUDE: 41 D. 49 M. 54 S. N
LONGITUDE: 71 D. 24 M. 56 S. W
UTM ZONE: 19
UTM NORTHING: 4633700
UTM EASTING: 0299400
ELEVATION ABOVE GROUND: 050 FT.
ELEVATION ABOVE MSL: 0100 FT.
DIFF. GMT: WEST 05 HOURS

POLLUTANT NAME
POLLUTANT-METHOD-INTERVAL-UNITS CODE

METHOD OF COLLECTION AND ANALYSIS

INTERVAL

STANDARD UNITS

YEAR	PCT OBS	NBR OBS	EXCURSIONS PRI	EXCURSIONS SEC	MIN DETEC	MIN OBS	PERCENTILES 10	30	50	70	90	95	99	MAX OPS	2ND MAX	ARIT MEAN	GEOM MEAN	GEOM STD DEV
PARTICULATE							HI-VOL GRAVIMETRIC							24-HOUR		UG/CU METER (25 C)		
11101-91-7-01																		
73		51	0	0	1.	21.	33.	40.	46.	64.	107.	130.	138.	178.	137.	58.	52.	1.6
74		49	0	2	1.	23.	37.	51.	63.	82.	103.	141.	157.	157.	155.	70.	63.	1.6
75		54	0	0	1.	32.	35.	43.	57.	67.	97.	102.	121.	121.	114.	60.	57.	1.4
CARBON MONOXIDE							INSTRUMENTAL NONDISPERSIVE INFRA-RED							1-HOUR		MG/CU METER (25 C)		
42101-11-1-05																		
72	93	8169	0	0	0.0	0.0	0.0	1.2	2.3	3.5	5.3	8.3	8.6	17.0	15.0	2.7	2.1	2.06
73	47	4126	0	0	0.0	0.3	0.0	1.2	1.7	2.9	4.0	6.2	6.5	19.0	13.8	2.3[8]	1.9[8]	1.90[8]
CARBON MONOXIDE							INSTRUMENTAL NONDISPERSIVE INFRA-RED							8-HR-AVG		MG/CU METER (25 C)		
42101-11-2-05																		
72		8116	1	1	0.0	0.0	0.0	1.0	2.4	3.3	4.7	5.6	7.2	10.4	9.5			
73		4098	0	0	0.0	0.0	0.0	1.4	2.0	2.7	3.9	6.7	6.1	9.1	8.2			
SULFUR DIOXIDE							INSTRUMENTAL WEST-GAERT COLORIMETRIC							1-HOUR		UG/CU METER (25 C)		
42401-11-1-09																		
73	95	7471	0	0	20.	13.	17.	39.	60.	110.	210.	289.	524.	958.	556.	98.	56.	2.9
74	84	7349	0	0	20.	13.	13.	33.	56.	74.	170.	242.	468.	988.	939.	69.[8]	38.[8]	2.9[8]
75	24	2134	0	0	20.	13.	17.	45.	76.	108.	188.	212.	313.	417.	390.	86.[8]	64.[8]	2.3[8]
SULFUR DIOXIDE							INSTRUMENTAL WEST-GAERT COLORIMETRIC							24-HR-AVG		UG/CU METER (25 C)		
42401-11-8-01																		
73		6960	0	0	20.	13.	20.	53.	76.	115.	195.	266.	401.	674.	578.			
74		7111	0	0	20.	13.	14.	28.	44.	77.	155.	212.	322.	414.	358.			
75		2117	0	0	20.	13.	34.	67.	86.	106.	154.	167.	195.	222.	204.			

Figure 20. Yearly Frequency Distribution Report Format.

Quarterly Frequency Distribution

GENERAL DESCRIPTION

This report lists the site description and quarterly summary information for all data that satisfy the retrieval criteria. The site description is repeated at the top of each page, followed by the data. The site description gives the geographical information necessary to locate the site and is separated from the data by a data heading. Below the data heading, the codes and names are given for the pollutant, the sampling and analysis methods, the sampling interval, and standard units in which the data are printed. The data items include: the year/quarter of the data; the percent of observations for continuous data; the number of observations; the number of primary and secondary violations of the NAAQSs; the minimum detectable for the sampling method; the minimum, maximum, and second maximum observations; the 10, 30, 50, 70, 90, 95, and 99 percentiles; the arithmetic mean; the geometric mean; and the geometric standard deviation. The number of violations of the NAAQSs represents the number of violations of the short-term standards, and for the running averages, the number of violations are for nonoverlapping running averages.

The retrieval and print options, which are based on summary criteria, are: (1) print all data that meet other selection criteria but do not print the means and standard deviation when summary criteria are not met (default), (2) print all data that meet other selection criteria and flag the statistics when summary criteria are not met, (3) print only data that meet summary criteria, or (4) print only data that fail the summary criteria.

RETRIEVAL OPTIONS

The report is generated from data that satisfy the following selection criteria: nation, state, area, site, agency, project, pollutant, method, interval, begin year-quarter, and end year-quarter, AQCR, and county.

Most combinations of the above selection criteria are valid, but the following combinations are invalid: (1) area or county without state, (2) site without state/area, (3) project without agency, and (4) method without pollutant.

The difference between a state/area and a state/county retrieval is important--a state/area selection will only give the sites in that area (city) while a state/county selection will give all state/area combinations located in that county.

SORT OPTIONS

This report may be sorted in ascending (default) or descending order by the following options: state, area, site, agency, project, AQCR, pollutant, method, units, interval, year, quarter, pollutant value, and county code. For this report, the pollutant value sort is on the quarterly maximum observed value. Any number of sorts can be specified in any desired order, but certain sort combinations would produce a confusing report.

SAMPLE REPORT

Figure 21 shows a Quarterly Frequency Distribution Report for particulate and carbon monoxide for a site in Providence, Rhode Island.

09-12-78 NATIONAL AEROMETRIC DATA BANK PAGE 41-0001
QUARTERLY FREQUENCY DISTRIBUTION
STATE (41): RHODE ISLAND

SITECODE: 410300005F01
AGENCY/PROJECT: F01
AGENCY TYPE: STATE
CITY POPULATION: 179,213
AQCR POPULATION: 1,645,380
EPA-REGION: 1
SUPPORTING AGENCY: RHODE ISLAND DEPARTMENT OF HEALTH
COMMENTS: PROVIDENCE STATION B

LOCATION: PROVIDENCE
COUNTY (C320): PROVIDENCE CO
SITE ADDR: STATE OFFICE BUILDING
STATION TYPE (11): CENTER CITY - INDUSTRIAL
AQCR (120): METROPOLITAN PROVIDENCE
SMSA (6480): PROVIDENCE-PAWTUCKET-WARWICK, R.I.-PASS

LATITUDE: 41 D. 49 M. 54 S. N
LONGITUDE: 71 D. 24 M. 56 S. W
UTM ZONE: 19
UTM NORTHING: 4633700
UTM EASTING: 0299400
ELEVATION ABOVE GROUND: 050 FT.
ELEVATION ABOVE MSL: 0100 FT.
DIFF. GMT: WEST 05 HOURS

POLLUTANT NAME / POLLUTANT-METHOD-INTERVAL-UNITS CODE / YR-QTR	PCT OBS	NBR OBS	#EXCURSIONS PRI	#EXCURSIONS SEC	MIN DETEC	MIN OBS	PERCENTILES 10	30	50	70	90	95	99	INTERVAL MAX OBS	STANDARD UNITS 2ND MAX	ARIT MEAN	GEOM MEAN	GEOM STD DEV
METHOD OF COLLECTION AND ANALYSIS: HI-VOL GRAVIMETRIC														24-HOUR		UG/CU METER (25 C)		
PARTICULATE																		
11101-91-7-01																		
73-01	16	0	0	1.	21.	42.	47.	51.	98.	122.	137.	137.	137.	122.	72.	64.	1.7	
73-02	14	0	0	1.	28.	32.	37.	43.	46.	69.	107.	107.	107.	69.	48.	45.	1.4	
73-03	13	0	0	1.	21.	33.	34.	43.	68.	130.	138.	138.	138.	130.	58.	50.	1.7	
73-04	8	0	0	1.	32.	32.	37.	38.	59.	71.	71.	71.	71.	64.	47.	46.	1.4	
74-01	8	0	1	1.	50.	50.	66.	78.	93.	155.	155.	155.	155.	98.	85.	80.	1.4	
74-02	9	0	0	1.	37.	37.	45.	61.	88.	141.	141.	141.	141.	103.	72.	66.	1.6	
74-03	11	0	1	1.	30.	39.	53.	58.	82.	98.	157.	157.	157.	98.	70.	64.	1.6	
74-04	13	0	0	1.	23.	33.	39.	51.	76.	96.	108.	138.	138.	96.	58.	53.	1.6	
METHOD OF COLLECTION AND ANALYSIS: INSTRUMENTAL NONDISPERSIVE INFRA-RED														1-HOUR		MG/CU METER (25 C)		
CARBON MONOXIDE																		
42101-11-1-05																		
72-01	90	1962	0	0	0.6	0.6	1.2	1.7	2.9	4.0	5.8	6.9	9.8	15.0	15.0	3.2	2.8	2.03
72-02	83	1806	0	0	0.6	0.6	0.6	1.2	1.7	2.3	4.6	5.2	6.9	13.8	11.5	2.0	1.5	2.11
72-03	99	2193	0	0	0.6	0.6	0.6	1.2	2.3	3.5	5.2	6.3	8.1	10.4	9.2	2.6	2.1	2.05
72-04	100	2206	0	0	0.6	0.6	1.2	1.7	2.3	3.5	4.6	5.8	10.4	17.8	15.0	2.7	2.3	1.80
73-01	93	1998	0	0	0.6	0.6	0.6	1.7	2.3	2.9	4.6	5.8	7.5	19.6	13.8	2.5	2.1	1.94
73-02	97	2128	0	0	0.6	0.3	0.6	1.2	1.7	2.3	3.5	4.6	5.8	10.4	9.2	2.0	1.7	1.83
METHOD OF COLLECTION AND ANALYSIS: INSTRUMENTAL NONDISPERSIVE INFRA-RED														8-HR-AVG		MG/CU METER (25 C)		
CARBON MONOXIDE																		
42101-11-2-05																		
72-01		1935	1	1	0.6	0.6	1.2	2.1	3.2	3.6	5.3	6.3	8.3	10.4	9.5			
72-02		1787	0	0	0.6	0.6	0.6	1.1	1.6	2.3	4.2	4.9	6.1	8.5	8.4			
72-03		2186	0	0	0.6	0.6	0.8	1.5	2.4	3.3	4.8	5.6	7.7	8.4	8.0			

Figure 21. Quarterly Frequency Distribution Report Format.

Yearly Report by Quarters

GENERAL DESCRIPTION

This report lists the site description and selected summary information for the year and for the individual quarters. The site description gives the geographical information necessary to locate the site. Below the data heading, the codes and names are given for the pollutant, the sampling and analysis methods, the sampling interval, and the standard units in which the data are printed. The data items include: the year of the data; the percent of observations for continuous data; the minimum detectable limit for the method; the arithmetic mean, arithmetic standard deviation, minimum observation, and maximum observation for the year; and the number of observations and arithmetic mean for each quarter.

The retrieval and print options, which are based on summary criteria, are: (1) print all data that meet other selection criteria but do not print quarterly and yearly statistics that do not meet the summary criteria, (2) print all data that meet other selection criteria and flag the statistics when summary criteria are not met, or (3) print only data that fail the summary criteria, with flags on the data.

RETRIEVAL OPTIONS

The report may be retrieved based on the following selection criteria: nation, state, area, site, agency, project, pollutant, method, interval, begin year, end year, AQCR, and county.

Most combinations of the above selection criteria are valid, but the following selections are invalid: (1) area or county without state, (2) site without state/area, (3) project without agency, and (4) method without pollutant.

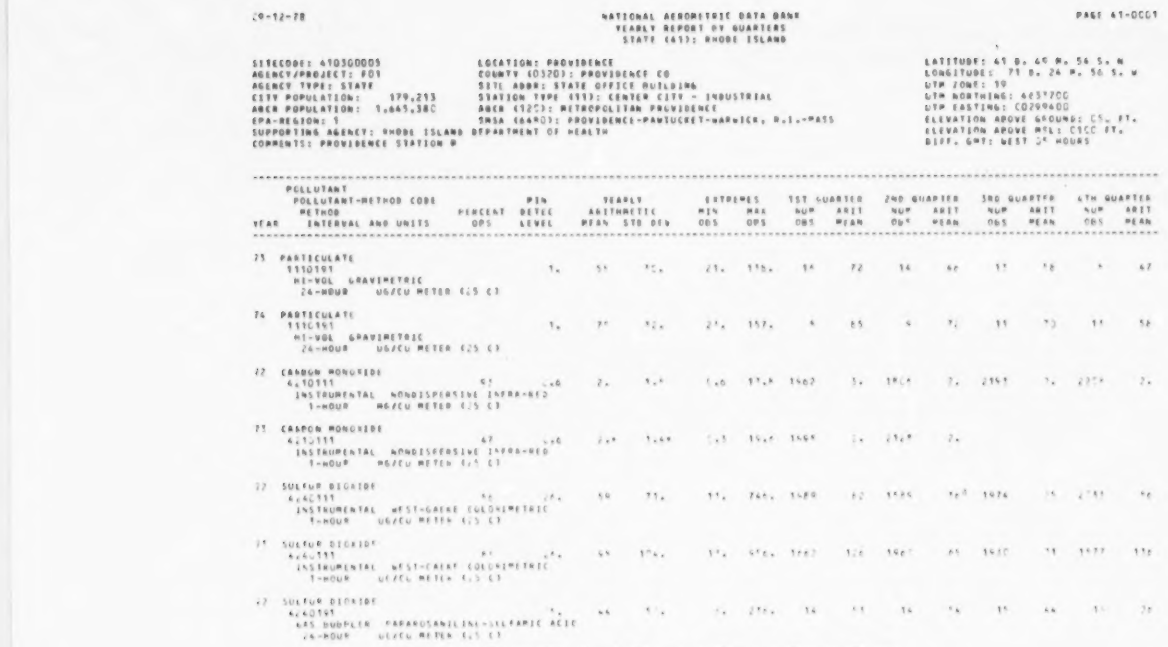
SORT OPTIONS

This report may be sorted in ascending (default) or descending order by the following options: state, area, site, agency, project, AQCR, pollutant, method, units, interval, year, pollutant value, and county code. For this report, the pollutant value sort is on the yearly maximum observed value. Any number of

sorts can be specified in any desired order, but certain sort combinations would produce a confusing report.

SAMPLE REPORT

A Yearly Report by Quarters for particulate, carbon monoxide, and sulfur dioxide for a site in Providence, Rhode Island, is shown in Figure 22.



```
09-12-78                          NATIONAL AEROMETRIC DATA BANK                          PAGE 41-0001
                                    YEARLY REPORT BY QUARTERS
                                    STATE (41): RHODE ISLAND

SITECODE: 410300005          LOCATION: PROVIDENCE                    LATITUDE: 41 D. 49 M. 56 S. N
AGENCY/PROJECT: 001          COUNTY (007): PROVIDENCE CO             LONGITUDE:  71 D. 24 M. 56 S. W
AGENCY TYPE: STATE           SITE ADDR: STATE OFFICE BUILDING        UTM ZONE: 19
CITY POPULATION:    179,213  STATION TYPE (11): CENTER CITY - INDUSTRIAL  UTM NORTHING: 4631700
AQCR POPULATION:  1,665,380  AQCR (120): METROPOLITAN PROVIDENCE     UTM EASTING: 0299400
EPA-REGION: 1                SMSA (6480): PROVIDENCE-PAWTUCKET-WARWICK, R.I.--MASS  ELEVATION ABOVE GROUND: 65. FT.
SUPPORTING AGENCY: RHODE ISLAND DEPARTMENT OF HEALTH                 ELEVATION ABOVE MSL: 0150. FT.
COMMENTS: PROVIDENCE STATION 9                                       DIFF. GMT: WEST 5. HOURS

-------------------------------------------------------------------------------------------------------------------------------------------------
     POLLUTANT                                                                                                                                  
      POLLUTANT-METHOD CODE                  MIN          YEARLY          EXTREMES        1ST QUARTER     2ND QUARTER     3RD QUARTER     4TH QUARTER
        METHOD                  PERCENT DETEC  ARITHMETIC                                  NUM    ARIT     NUM    ARIT     NUM    ARIT     NUM    ARIT
YEAR     INTERVAL AND UNITS      OPS   LEVEL  MEAN  STD DEV  MIN OBS  MAX OBS  NUM OBS  MEAN  OBS  MEAN  OBS  MEAN  OBS  MEAN  OBS  MEAN
-------------------------------------------------------------------------------------------------------------------------------------------------

73  PARTICULATE
     1110101                              1.   51    75.     21.     175.     15    72     14    62     17    78      3    67
      HI-VOL  GRAVIMETRIC
       24-HOUR     UG/CU METER (25 C)

74  PARTICULATE
     1110101                              1.   71    52.     21.     157.      4    65      4    72     15    73     15    58
      HI-VOL  GRAVIMETRIC
       24-HOUR     UG/CU METER (25 C)

42  CARBON MONOXIDE
     4.10111                  61      .46    2.    1.4     .6      17.4   1462     1.   19.4    2.   2393     1.   2374     2.
      INSTRUMENTAL  NONDISPERSIVE INFRA-RED
        1-HOUR     MG/CU METER (25 C)

43  CARBON MONOXIDE
     4.10111                  62      .46    2.4   1.69    .3      15.4   1469     1.   21.9    2.
      INSTRUMENTAL  NONDISPERSIVE INFRA-RED
        1-HOUR     MG/CU METER (25 C)

22  SULFUR DIOXIDE
     4.40111                  56      .4.    59    73.     11.     764.   1489     62   1525    76   1974     15   2781     56
      INSTRUMENTAL  WEST-GAEKE COLORIMETRIC
        1-HOUR     UG/CU METER (25 C)

21  SULFUR DIOXIDE
     4.40111                  61      .4.    69    174.    17.     976.   1762     126  1967    65   1910     71   1977     119
      INSTRUMENTAL  WEST-GAEKE COLORIMETRIC
        1-HOUR     UG/CU METER (25 C)

47  SULFUR DIOXIDE
     4.40191                  1.      46     5.      .      27.     14     11     14     14     15     44     11     21
      ARS DUPLEX  PARAROSANILINE-SULFAMIC ACID
       24-HOUR     UG/CU METER (25 C)
```

Figure 22. Yearly Report by Quarters Report Format.

Inventory Reports

GENERAL DESCRIPTION

SAROAD provides for the reporting of data availability by site and pollutant. Information can be provided as follows:

1. Inventory by site.
2. Inventory by pollutant.
3. State inventory by pollutant.

The three reports vary only in the order of the first five columns of data and the sorted order. All the reports present the same data in the last six columns as follows:

1. Internal code.
2. Units code.
3. Year.
4. Number of observations.
5. Maximum observation.
6. Arithmetic mean.

The order of the first five columns depends on the report requested, as follows:

1. Inventory by site – site code, agency/project codes, location name, pollutant name, pollutant method codes.

2. Inventory by pollutant – pollutant method codes, pollutant name, site code, agency/project codes, and location name.

3. State inventory by pollutant – field order is the same as for the inventory by pollutant report. Note that only one state's data are contained in this report.

RETRIEVAL OPTIONS

Selections by nation, state, area, pollutant, and year or valid combinations are available.

SORT OPTIONS

Sorts for the reports are available as follows:

1. Inventory by site: by Site ID, then by pollutant within Site.

2. Inventory by pollutant: by pollutant, then by state and area.

3. State inventory by pollutant: by state, then by pollutant and area site.

SAMPLE REPORTS

Samples of these three types of reports are shown in Figures 23, 24, and 25.

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SITE CODE	AQ/ PR/	LOCATION NAME	POLLUTANT NAME	POL-MTH CODE	INT CODE	UNIT CODE	YEAR	NUM OBS	MAX OBS	ARITH MEAN	
0130200001	FCI	ABBEVILLE	PARTICULATE	1110191	7	01	1974	41	123.	42.	
					7	01	1975	34	56.	27.	*
					7	01	1976	45	82.	30.	
					7	01	1977	18	58.	33.	*
0100600001	FCI	ALEXANDER CITY	PARTICULATE	1110191	7	01	1974	30	85.	38.	
					7	01	1975	24	61.	31.	*
					7	01	1976	29	68.	38.	
					7	01	1977	38	692.	47.	
0101200001	FCI	ANDALUSIA	PARTICULATE	1110191	7	01	1972	57	110.	50.	
					7	01	1973	73	180.	57.	
					7	01	1974	39	105.	49.	*
					7	01	1975	14	58.	31.	*
					7	01	1976	24	78.	42.	*
					7	01	1977	45	278.	49.	
			BENZENE SOLUBLE ORGANIC FRACTION	1110391	7	01	1972	38	8.1	4.0	
					7	01	1973	17	1.4	5.0	*
0100200001	FCI	ANNISTON	PARTICULATE	1110191	7	01	1972	39	133.	61.	*
					7	01	1973	39	133.	62.	*
					7	01	1974	38	176.	67.	*
					7	01	1975	26	93.	45.	*
					7	01	1976	47	112.	53.	
					7	01	1977	56	278.	69.	
			BENZENE SOLUBLE ORGANIC FRACTION	1110391	7	01	1972	37	9.5	4.8	*
					7	01	1973	7	4.6	4.1	*
			SULFUR DIOXIDE	4260191	7	07	1974	7	.072	.032	*
0102200002	FCI	ANNISTON	PARTICULATE	1110191	7	01	1975	33	84.	36.	*
					7	01	1976	53	192.	49.	
					7	01	1977	51	174.	52.	
0101700001	FCI	ATHENS	PARTICULATE	1110191	7	01	1975	42	134.	33.	*
					7	01	1976	55	157.	87.	
					7	01	1977	42	174.	69.	*
					7	01	1976	55	140.	68.	
					7	01	1977	56	192.	63.	
			SULFUR DIOXIDE	4260191	7	07	1974	59	.055	.031	
					7	07	1977	45	.116	.060	*
			NITROGEN DIOXIDE	4260291	7	07	1975	11	.114	.039	*
			NITROGEN DIOXIDE	4260299	7	07	1975	2	.030	.030	*
					7	07	1976	42	.292	.041	*
					7	07	1977	26	.036	.014	*
0101600002	001	ATHENS	PARTICULATE	1110191	7	01	1975	17	111.	71.	*
					7	01	1976	16	184.	73.	*
0101600003	001	ATHENS	PARTICULATE	1110191	7	01	1977	7	174.	66.	*
					7	01	1976	55	195.	71.	
					7	01	1977	46	132.	63.	*
					7	01	1976	43	171.	59.	
					7	01	1977	51	224.	65.	
			SCALING INCLN ETHANE TISSIONS	1107101	7	09	1974	531	.57	.24	*
			SULFUR DIOXIDE	4260191	7	07	1974	59	.053	.031	

*** DENOTES A VALUE DERIVED FROM DATA WHICH DO NOT MEET SAMPLE SUMMARIZATION CRITERIA OF DACPS GUIDELINE 1.2-078, VOL 1, SEC 2.3.C

Figure 23. Inventory by Site Report.

09-12-78 NATIONAL AEROMETRIC DATA BANK PAGE ...0001
INVENTORY BY POLLUTANT
PARTICULATE

POL-MTH CODE	POLLUTANT NAME	SITE CODE	AGY PRJ	LOCATION NAME	INT CODE	UNIT CODE	YEAR	NUM OBS	MAX OBS	ARITH MEAN	
111C101	PARTICULATE	01C02C0C1	FC1	ABBEVILLE	7	01	1974	41	123.	42.	
					7	01	1975	34	56.	27.	*
					7	01	1976	45	62.	30.	
					7	01	1977	18	58.	33.	*
		01C06C0C1	FC1	ALEXANDER CITY	7	01	1974	38	85.	38.	
					7	01	1975	22	61.	31.	*
					7	01	1976	29	68.	38.	
					7	01	197	38	492.	47.	
		01C10C0C1	FC1	ANDALUSIA	7	01	1972	37	118.	58.	
					7	01	1973	33	188.	57.	
					7	01	1974	19	105.	49.	*
					7	01	1975	14	58.	31.	*
					7	01	1976	24	74.	42.	*
					7	01	1977	45	278.	49.	
		01C12C0C1	FC1	ANNISTON	7	01	1972	39	133.	81.	*
					7	01	1973	38	103.	62.	*
					7	01	1974	18	106.	67.	*
					7	01	1975	28	97.	45.	*
					7	01	1976	47	110.	53.	
					7	01	1977	56	231.	69.	
		01C12C0C2	FC1	ANNISTON	7	01	1975	17	64.	36.	*
					7	01	1976	53	192.	69.	
					7	01	1977	50	194.	58.	
		01C16C0C1	GC1	ATHENS	7	01	1973	42	197.	77.	*
					7	01	1974	55	157.	87.	
					7	01	1975	42	158.	69.	*
					7	01	1976	55	148.	68.	
					7	01	1977	54	152.	63.	
		01C16C0C2	GC1	ATHENS	7	01	1973	37	112.	71.	*
					7	01	1974	36	188.	73.	*
		01C16C0C3	GC1	ATHENS	7	01	1973	7	104.	66.	*
					7	01	1974	55	139.	71.	
					7	01	1975	46	120.	60.	*
					7	01	1976	53	127.	59.	
					7	01	1977	58	224.	65.	
		01C26C0C1	AC3	BALDWIN CO	7	01	1959	23	60.	30.	
		01C26C0C2	FC3	BALDWIN CO	7	01	1974	28	116.	75.	*
					7	01	1975	24	126.	62.	*
					7	01	1976	40	99.	63.	
					7	01	1977	14	147.	85.	*

Figure 24. Inventory by Pollutant Report.

POL-MTH CODE	POLLUTANT NAME	SITE CODE	AQ/ PRJ	LOCATION NAME	INT CODE	UNIT CODE	YEAR	NUM OBS	MAX OBS	ARITH MEAN	
11101	PARTICULATE	010020001	F01	ABBEVILLE	7	01	1974	41	123.	42.	
					7	01	1975	34	56.	27.	*
					7	01	1976	45	62.	30.	
					7	01	1977	18	58.	33.	*
		010060001	F01	ALEXANDER CITY	7	01	1974	38	85.	38.	
					7	01	1975	22	61.	31.	*
					7	01	1976	29	68.	38.	
					7	01	1977	38	492.	47.	
		010100001	F01	ANDALUSIA	7	01	1972	37	118.	58.	
					7	01	1973	33	188.	57.	
					7	01	1974	19	105.	49.	*
					7	01	1975	14	58.	31.	*
					7	01	1976	24	74.	42.	*
					7	01	1977	45	278.	49.	
		01C120001	F01	ANNISTON	7	01	1972	39	133.	81.	*
					7	01	1973	38	103.	62.	*
					7	01	1974	18	106.	67.	*
					7	01	1975	28	97.	45.	*
					7	01	1976	47	110.	53.	
					7	01	1977	56	231.	69.	
		01C12C02	F01	ANNISTON	7	01	1975	17	64.	36.	*
					7	01	1976	53	192.	49.	
					7	01	1977	50	104.	52.	
		01C160001	601	ATHENS	7	01	1973	42	117.	73.	*
					7	01	1974	55	157.	87.	
					7	01	1975	42	158.	69.	*
					7	01	1976	55	148.	68.	
					7	01	1977	54	152.	63.	
		01C16002	601	ATHENS	7	01	1973	37	1^2.	71.	*
					7	01	1974	36	188.	73.	*
		01C16003	601	ATHENS	7	01	1973	7	104.	66.	*
					7	01	1974	55	139.	71.	
					7	01	1975	46	120.	60.	*
					7	01	1976	53	127.	59.	
					7	01	1977	58	224.	65.	
		010260001	A03	BALDWIN CO	7	01	1959	23	60.	30.	
		01C26002	F03	BALDWIN CO	7	01	1974	28	116.	75.	*
					7	01	1975	24	128.	62.	*
					7	01	1976	40	99.	63.	
					7	01	1977	14	147.	89.	*

Figure 25. State Inventory by Pollutant.

Summary Report of Valid Data

GENERAL DESCRIPTION

This report produces a tabulation, one line for each site-pollutant combination, indicating the quantity of data reported for a pollutant. The time period of interest, which is specified by the user, can be from 1 to 5 years. For each quarter of the year or years specified, a column of coded data appears. The codes, together with their meanings, are as follows:

1. "0" means "no data."
2. "1" means "data do not meet summary criteria."
3. "2" means "data do meet summary criteria."

The "Site" and "Pollutant" columns contain codes for agency type and project classification (under "Site") and for method of collection and analysis and time interval (or period of observation) (under "Pollutant"). The meanings of these codes are given in Volume V of the AEROS Manual.

RETRIEVAL OPTIONS

Retrieval may be by pollutant, by nation, by state, or by area, site, agency, or project classification, or any combination of these.

SORT OPTIONS

The standard sorting hierarchy is by state, AQCR, area, site number, agency type, project classification code, pollutant type, method code, and time interval, all in ascending numerical or alphabetical order. No options for alternative sorting sequences are available.

SAMPLE REPORT

Figure 26 shows a sample of the Summary Report of Valid Data for the State of Rhode Island.

09-25-78

SUMMARY REPORT OF VALID DATA
NATIONAL AEROMETRIC DATA BANK
STATE (44)= RHODE ISLAND

PAGE 1

!0=NO DATA
!1=DATA DO NOT MEET SUMMARY CRITERIA!
!2=DATA DO MEET SUMMARY CRITERIA ! !

AQCR	AREA	SITE AQ/PROJ CODE	POLLUTANT METH/INT CODE	1973 I II III IV	1974 I II III IV	1975 I II III IV	1976 I II III IV	1977 I II III IV	TOTAL
120	BRISTOL	001/E01	TSP-91/7	2 2 2 2	2 2 2 2	2 2 0 0	0 0 0 0	0 0 0 0	10
120	BRISTOL	001/E01	SO2-91/7	0 0 0 0	0 0 1 2	2 2 0 0	0 0 0 0	0 0 0 0	3
120	BRISTOL	001/E01	NO2-99/7	0 0 0 0	0 0 1 2	2 2 0 0	0 0 0 0	0 0 0 0	3
120	BURRILLVILLE	001/E01	TSP-91/7	2 2 2 2	2 2 2 2	2 1 0 0	0 0 0 0	0 0 0 0	9
120	BURRILLVILLE	001/E01	SO2-91/7	0 0 0 0	0 0 1 2	2 2 0 0	0 0 0 0	0 0 0 0	3
120	BURRILLVILLE	001/E01	NO2-99/7	0 0 0 0	0 0 1 2	2 2 0 0	0 0 0 0	0 0 0 0	3
120	CHARLESTOWN	001/E01	TSP-91/7	2 1 0 0	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	1
120	CHARLESTOWN	001/E01	SO2-91/7	2 1 0 0	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	1
120	CRANSTON	001/E01	TSP-91/7	2 2 2 2	2 2 2 2	2 2 2 2	2 2 2 2	2 2 2 2	30
120	CRANSTON	001/E01	SO2-91/7	2 2 2 2	2 2 2 2	2 2 2 2	2 2 2 2	2 2 2 2	30
120	CRANSTON	001/E01	NO2-99/7	0 0 0 2	2 2 2 2	2 2 2 2	2 2 2 2	2 2 2 2	18
120	CRANSTON	002/E01	TSP-91/7	0 1 2 2	2 2 2 2	2 2 2 2	2 2 2 2	2 2 2 2	15
120	CRANSTON	002/E01	SO2-91/7	0 1 2 2	2 2 2 2	2 2 2 2	2 2 2 2	2 2 2 2	15
120	CRANSTON	002/E01	NO2-99/7	0 0 0 2	2 2 2 2	2 2 2 2	2 2 2 2	2 2 2 2	14
120	CRANSTON	001/E01	TSP-91/7	2 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	2
120	EAST PROVIDENCE	001/E01	TSP-91/7	0 0 0 0	0 0 0 2	2 2 2 2	2 2 2 2	2 2 2 2	18
120	EAST PROVIDENCE	001/E01	SO2-91/7	0 0 0 0	0 0 0 2	2 2 2 2	2 2 2 2	2 2 2 2	18
120	EAST PROVIDENCE	001/E01	NO2-99/7	0 0 0 0	0 0 0 2	2 2 2 2	2 2 2 2	2 2 2 2	18
120	EAST PROVIDENCE	001/E01	TSP-91/7	2 2 2 2	2 2 2 2	2 2 0 0	0 0 0 0	0 0 0 0	16
120	EAST PROVIDENCE	001/E01	SO2-91/7	2 2 2 2	2 2 2 2	2 2 0 0	0 0 0 0	0 0 0 0	16
120	EAST PROVIDENCE	001/E01	NO2-99/7	0 0 0 2	2 2 2 2	2 2 0 0	0 0 0 0	0 0 0 0	14
120	EAST PROVIDENCE	004/E01	TSP-91/7	0 2 0 0	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	2
120	EAST PROVIDENCE	004/E01	SO2-91/7	2 2 2 2	2 2 2 2	2 2 2 2	2 2 2 2	2 2 2 2	30
120	EAST PROVIDENCE	004/E01	NO2-99/7	0 0 0 2	2 2 2 2	2 2 2 2	2 2 2 2	2 2 2 2	26
120	EAST PROVIDENCE	004/E01	TSP-91/7	0 2 2 2	2 2 2 2	2 2 2 2	2 2 2 2	2 2 2 2	28
120	EAST PROVIDENCE	004/E01	SO2-14/1	0 1 2 1	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	4
120	EAST PROVIDENCE	004/E01	SO2-14/3	0 2 2 2	2 2 2 2	2 2 2 2	2 2 2 2	2 2 2 2	30
120	EAST PROVIDENCE	004/E01	SO3-14/3	0 2 2 2	2 2 2 2	2 2 2 2	2 2 2 2	2 2 2 2	30
120	EAST PROVIDENCE	004/E01	SO2-91/7	0 2 2 2	2 2 2 2	2 2 2 2	2 2 2 2	2 2 2 2	30
120	EAST PROVIDENCE	004/E01	NO2-99/7	0 0 0 2	2 2 2 2	2 2 2 2	2 2 2 2	2 2 2 2	26
120	EAST PROVIDENCE	004/E05	SO2-14/1	0 0 0 1	2 2 2 2	2 2 2 2	2 2 2 2	2 2 2 2	29
120	EAST PROVIDENCE	004/E05	SO2-14/3	0 0 0 2	2 2 2 2	2 2 2 2	2 2 2 2	2 2 2 2	30
120	EAST PROVIDENCE	004/E05	SO2-14/3	0 0 0 2	2 2 2 2	2 2 2 2	2 2 2 2	2 2 2 2	30
120	EAST PROVIDENCE	001/E01	TSP-91/7	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	0
120	EAST PROVIDENCE	001/E01	SO2-91/7	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	0
120	EAST PROVIDENCE	004/E01	TSP-91/7	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	0
120	KENT CO	001/E01	TSP-91/7	2 1 0 0	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	1
120	KENT CO	001/E01	SO2-91/7	2 1 0 0	0 0 0 0	0 0 0 0	0 0 2 2	0 0 2 1	9
120	KENT CO	002/E03	O3 -11/1	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	0

Figure 26. Summary Report of Valid Data.

Summary of Monitoring Activity

GENERAL DESCRIPTION

This report produces a tabulation by state and AQCR for the selected pollutants of the sites meeting the summary criteria for the quarter selected for study. The result is a nationwide report sorted by AQCR within states for all 55 "states." Each state has its own page in the report, with each AQCR within the state occupying one line of data. There is also a "Total" line at the bottom of each page, but no grand total; that is, only the totals for each state are given.

For each of the pollutant-sampling period combinations, three columns of data are given; these columns are headed "REQ," "PRO," and "RPT," meaning, respectively, "Required by EPA," "Proposed in the State Implementation Plan (SIP) for 1974," and "Reporting to the National Aerometric Data Bank – Based on Quarter X of 197X Data." The seven possible pollutant-averaging period combinations are: (1) TSP (total suspended particulates)-daily, (2) SO_2-daily, (3) SO_2-hourly, (4) NO_2-daily, (5) NO_2-hourly, (6) CO-hourly, (7) O_x-hourly.

RETRIEVAL OPTIONS

The report is available only on a nationwide basis. The data satisfying the summary criteria are tallied by monitoring site for a single quarter of the given calendar year. If data for more than one quarter are needed, a separate run must be made for each quarter.

SORT OPTIONS

The report is sorted by state and AQCR and no other sorts may be specified.

SAMPLE REPORT

A portion of this summary report for Alabama is shown in Figure 27.

09-13-7a

SUMMARY OF MONITORING ACTIVITY
NATIONAL AEROMETRIC DATA BANK
STATE (01) : ALABAMA

PAGE 1

AQCR	TSP			SO2-DAILY			SO2-HOURLY			NO2-DAILY			NO2-HOURLY			CO-HOURLY			O3-HOURLY		
	REQ	PRO	RPT	REQ	PRO	RPT	REQ	PRO	RPT	REQ	PRO	RPT	REQ	PRO	RPT	REQ	PRO	RPT	REQ	PRO	RPT
001	3	3	3	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
002	5	5	9	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
003	6	6	9	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
004	10	10	20	3	3	2	1	1	0	0	0	3	0	0	0	3	3	2	3	3	3
005	3	9	16	2	3	10	1	1	2	0	0	0	0	0	0	0	0	0	1	1	1
006	3	3	9	1	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
007	7	7	29	5	5	10	1	2	1	0	0	7	0	0	1	0	0	0	0	0	1
TOTAL	37	38	80	14	15	26	3	4	3	0	0	10	0	0	1	3	3	2	4	4	4

REQ = REQUIRED BY EPA

PRO = PROPOSED IN STATE IMPLEMENTATION
PLAN FOR 1974

RPT = REPORTING TO NATIONAL AEROMETRIC
DATA BANK - BASED ON QUARTER 1 OF 1977

Figure 27. Summary of Monitoring Activity Report.

Active Site Report

GENERAL DESCRIPTION

This report consists of a sorted inventory of sites that have reported SAROAD data during a specified time interval. The report is made up of a series of subreports, one for each site. Each site report contains a description of the site and summaries of the pollutants measured, methods used, time intervals, units, and number of observations reported.

RETRIEVAL OPTIONS

There are 10 key items upon which retrieval may be made in this report: state, area, site, agency type, project classification, pollutant type, method of collection and analysis, sampling interval, AQCR, and starting and ending dates. Certain combinations of selection keys are prohibited. For example, a site key may be entered only if an area key is also entered, and an area key may be entered only if a state key is also entered. Similarly, a project classification code may be included only if an agency type is also specified only, and a method code may be included only if a pollutant type is also specified. All other combinations may be considered as valid retrievals.

SORT OPTIONS

The selected sites may be sorted in a variety of ways before the report is printed. The six possible codes available for use are:

1. Ascending key STATE.
2. Ascending key AREA.
3. Ascending key SITE.
4. Ascending key AGENCY.
5. Ascending key PROJECT.
6. Ascending key AQCR.

The sort codes may be entered in any order, and the order determines the sorting hierarchy; that is, the first code entered will determine the primary sort, the second one will determine the secondary sort, and so on. There are only two restrictions on the use of the sort codes: at least one sort code must be specified, and each sort code may appear only once for a given run.

SAMPLE REPORT

Figure 28 shows a portion of the inventory report for Rhode Island.

DATE: SEP 12, 1978 NATIONAL AEROMETRIC DATA BANK PAGE: 0001

INVENTORY OF SITES REPORTING DATA DURING 1ST RECORDED DATE THRU THE PRESENT DATE

STATE(47): RHODE ISLAND

```
SITELOBE: 410C9CC02FU2                LATITUDE(D.M.S.):  41 25 59 N          EPA REGION: 01          UTM ZONE: 19
SITE ADDRESS: UNITED NUCLEAR          LONGITUDE(D.M.S.):  71 40 47 W    ELEV ABOVE GROUND: CCC7   UTM NORTHING:  4590100
CITY OR AREA: CHARLESTOWN               CITY POPULATION:      2,861      ELEV ABOVE MSL: CC65   UTM EASTING: C0276100
COUNTY(C3MC): WASHINGTON CO             AQCR POPULATION:  1,645,780  TIME ZONE(REF GMT): WEST 05 HOURS
STATION TYPE: RURAL - INDUSTRIAL              AQCR(12C): METROPOLITAN PROVIDENCE
 AGENCY TYPE: STATE                           SMSA(C3C): C NOT IN A STANDARD METROPOLITAN STATIST
SUPP. AGENCY: R.I. STATE DEPT OF HEALTH, DIV. OF AIR POLLUTION CONTROL
     COMMENT:

POL/MTH/INT          POLLUTANT NAME          METHOD OF COLLECTION AND ANALYSIS        INTERVAL        UNITS          # OBS
*********** ********************** ********************************************** ********* ********************** *****

19?_1/51/7  ALPHA (GROSS)             HI-VOL  PROPORTIONAL COUNTER                  24-HOUR   PICOCURIES/CU. METER      37


SITECOBE: 410150001F01                LATITUDE(D.M.S.):  41 47    N          EPA REGION: 01          UTM ZONE: 19
SITE ADDRESS: CRANSTON POLICE DEPT    LONGITUDE(D.M.S.):  71 28 22 W    ELEV ABOVE GROUND: CC30   UTM NORTHING:  4628400
CITY OR AREA: CRANSTON                  CITY POPULATION:     79,037      ELEV ABOVE MSL: C150   UTM EASTING: C0294500
COUNTY(C32C): PROVIDENCE CO             AQCR POPULATION:  1,645,780  TIME ZONE(REF GMT): WEST 05 HOURS
STATION TYPE: SUBURBAN - RESIDENTIAL          AQCR(12C): METROPOLITAN PROVIDENCE
 AGENCY TYPE: STATE                           SMSA(C49C):  PROVIDENCE-PAWTUCKET-WARWICK, R.I.-MASS.
SUPP. AGENCY: RHODE ISLAND DEPARTMENT OF HEALTH
     COMMENT:

POL/MTH/INT          POLLUTANT NAME          METHOD OF COLLECTION AND ANALYSIS        INTERVAL        UNITS          # OBS
*********** ********************** ********************************************** ********* ********************** *****

1911_1/51/7  PARTICULATE              HI-VOL  GRAVIMETRIC                           24-HOUR   UG/CU METER (25 C)        59
424_1/41/7  SULFUR DIOXIDE            GAS BUBBLER  PARAROSANILINE-SULFAMIC ACID     24-HOUR   UG/CU METER (25 C)        2?
```

Figure 28. Active Site Report.

Additional References

Other publications that describe and supplement this booklet for SAROAD as well as other AEROS data bases include:

1. *AEROS Manual Series, Volume I: AEROS Overivew*, EPA-450/2-76-001. As the name implies, it presents an overview of the system.

2. *AEROS Manual Series, Volume II: AEROS User's Manual*, EPA-450/2-76-029. This manual describes data coding as well as the data flow procedures.

3. *AEROS Manual Series, Volume III: Summary and Retrieval*, EPA-450/2-76-009. This manual describes computerized reports as well as several examples of data analysis.

4. *AEROS Manual Series, Volume V: AEROS Manual of Codes*, EPA-450/2-76-005. This manual contains all necessary AEROS codes.

These manuals are available from the same sources as the SAROAD publications.

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Glossary

Agency code – Alphabetic code assigned as part of the site identifier to designate the type of agency (USEPA, state, county, city, private) that performs the laboratory analysis for the sample.

Air Quality Control Region (AQCR) – One of 247 geographical areas in which the 55 "states" are divided based on jurisdictional boundaries, urban industrial concentrations, and other factors, including atmospheric areas necessary to provide adequate implementation of air quality standards.

Air quality data – Individual numeric values representing the concentration of a given pollutant in the air at a given site and time.

Area code – The numeric code assigned as part of the site identifier to indicate the city in which the site is located, or if it is not located in a city, it indicates the county in which the site is located.

Computerized report – A printed data display created by a computer program from a data file based on specific retrieval and sort options. The specific format and amount of data vary with the program and the retrieval and sort options utilized.

Criteria pollutant – Any pollutant for which a National Ambient Air Quality Standard has been promulgated.

Data – Items of information concerning the environment surrounding a site or concentrations of air pollutants sampled at a site.

Edit checks – The standard data processing checks performed to ensure that data are correctly coded. In SAROAD, these checks include a check that all codes are valid, that all numeric fields contain numeric values with no embedded blanks, that the correct data formats are utilized, and that data values are within selected bounds.

Identifier – Unique set of characters that identify an individual data record. In SAROAD, the site identifier includes the codes for state, area, site, agency, and project. The data identifier includes the site identifier, the date, and the codes for pollutant, method, units, and interval.

Preceding page blank

Method code – Unique identifier for each pollutant that identifies the method utilized to collect the sample and analyze for the specific pollutant.

Monitoring network – Several sampling sites that are operated to collect air quality data.

Parameter code – In SAROAD, an individual five-digit code assigned to a specific pollutant. An hierarchical coding structure was developed to permit assignment of codes for thousands of individual pollutants.

Project code – Numeric code assigned as part of the site identifier to designate the type of sampling (population oriented, source oriented, background, etc.) that is performed at a site.

Publication – In SAROAD, one of several printed books compiled from site information and summary data and published to reflect air quality and site information for a given time period.

Retrieval option – Options available for the selection of a subset of records from a data file based on a partial or complete identifier. The selection based on a specific partial or complete identifier produces a file of all records with identifiers that meet selection criteria.

SAROAD codes – Geographical identification codes assigned to states, counties, and cities. The state codes are two-digit codes from 1 to 55. The city and county codes are four-digit codes assigned after the city and county names were arranged in alphabetical order. A city code was assigned to each incorporated city with a 1970 population over 2500.

Sampling site – A location where one or more samplers are operated to collect air quality data.

Sampling time interval – The time period over which the sample was collected. Instruments operate continuously and the data are reported as 1-hour averages while integrated samplers operate 24 hours and a single 24-hour average concentration is reported.

Sort option – Order of reporting formatted data in a computerized report. Each computerized report creates a unique format, which is repeated for each retrieved record. The sort can be on the individual parts of the key or by specific data items in each record.

State – In SAROAD, one of the 50 states plus Washington, DC, and the territories of American Samoa, Guam, Puerto Rico, and the Virgin Islands.

Units – One of the identifiers for data that indicates the dimensional system utilized to express the concentration of the specific pollutant. Air pollutants are routinely reported in concentration units of micrograms pollutant per cubic meter of air ($\mu g/m^3$) or parts of pollutant per million parts of air (ppm).

UTM coordinates – Map coordinates based on the Universal Transverse Mercator System developed by the U.S. Army. The UTM system provides for the projection of uniform square grid zones with convenient measuring units. UTM coordinates of sites are normally reported in kilometers.

UTM zone – A north-south zone six degrees wide with a central transverse mercator as defined by the UTM coordinate system.